An investigation of the relationship between psychotic-like experiences and adverse events in 18-14 year olds

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'Knowledge is in the end based on acknowledgement'- Wittgenstein

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Service Related Project:

A pilot investigation of a brief, needs led caregiver focused intervention in psychosis in Southwark Central Psychosis Community Service

Supervised by Dr. Juliana Onwumere & Professor Elizabeth Kuipers

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ABSTRACT

Caregivers play an important role in the treatment and recovery of people with psychosis. These caregivers can experience significant distress and have specific needs that are distinct from the service user. Caregivers require individualised interventions to reduce distress and improve well-being, in line with recent government mental health policies. However, responding to caregiver needs is not readily identified as being the main responsibility of anyone in clinical services. A small pilot study sought to evaluate the effect and acceptability of providing brief, needs led interventions for caregivers of service users with psychosis. Four caregivers completed a brief, interactive and structured intervention that focused on facilitated access to reliable information about psychosis, goal setting, problem-solving, and sleep hygiene. Affect, coping and care-giving impact were assessed at baseline and post-intervention. Caregivers attended 2-3 individual intervention sessions. Post-intervention scores showed the interventions were successful in reducing levels of psychological distress and depressive symptoms. Caregivers reported high levels of satisfaction with the intervention and both caregivers and team members thought it would be an acceptable intervention within the service. Larger scale studies are required to evaluate their impact and implications for staff training and cost in routine services, and on service user outcomes.

Introduction

1. Background

The aim of this service evaluation was to investigate the effectiveness of a brief, needs led intervention for caregivers of service users with psychosis from the Southwark Central Community Psychosis Service in Peckham, South Southwark.

2. Psychosis

Psychosis is a chronic and debilitating disorder characterised by distortions in thinking and perception, emotions, and social functioning difficulties (WHO, 2001). It is diagnosed in 1% of the population during their lifetime, with a point prevalence of 0.4% (Saha, Chant, Welham, & McGrath, 2005). Many individuals continue to experience residual positive symptoms (hallucinations and delusions) and associated levels of distress, disability (Robinson, Woerner, McMeniman, Mendelowitz, & Bilder, 2004; Rosen & Garety, 2005) and risk of relapse in psychosis are high (Robinson et al., 1999). The social networks of service users will often significantly diminish (Bengtsson-Tops & Hansson, 2001), which is already evident at the prodromal and first episode stage (Horan, Subotnik, Snyder, & Nuechterlein, 2006) often resulting in high levels of social isolation and exclusion from the community. Informal caregivers play an important role in supplementing the reduced social contacts of service users with psychosis, provide an important source of emotional support and play a vital part in meeting their needs (Fleury, Grenier, Caron, & Lesage, 2008; Garety et al., 2008; Lester et al., 2011; Norman, Lewis, & Marshall, 2005).

3. Caregivers, impact of care and a service for carers

A large proportion of service users with psychosis will live with or remain in close contact with informal caregivers, who are predominantly, but not exclusively, close family relatives such as parents, spouses, or siblings (Parabiaghi et al., 2007). Carers have been defined as "someone who without payment provides help or support to a partner, child, relative, friend, or neighbour who could not manage without their help" (www.carers.org). In the UK, the numbers of informal caregivers are estimated to fall between 120,000-240,000 (Kuipers, 2010; TheSchizophreniaCommission, 2012) although the term carer is not readily accepted by some (Burns et al., 2012). Notwithstanding these issues, we know that caregivers play a significant role in the recovery of relatives with psychosis (Barrowclough, 2006). They are often the first to identify early indicators of relapse (Burns & Guest, 1999) and facilitate access to relevant services for the service user (Morgan et

al., 2006) and reduce the need for costly inpatient admissions (Norman et al., 2005). They can also augment service user engagement with gains from psychological therapy (CBT; Garety et al 2008). There is some evidence to suggest that the prescribing practices for community psychiatrists differed significantly when service users had carers. Depot medications were more likely to be issued to service users without carers (Wilk et al., 2008). Service users with carers have fewer inpatient admissions and are more stable on medication (Fleury et al., 2008).

Unfortunately however, over 60 years of research confirm that the impact of care in psychosis can be associated with considerable psychological and physical morbidity for caregivers (Awad & Voruganti, 2008; Kuipers & Bebbington, 2005; Kuipers, Onwumere, & Bebbington, 2010). As part of their role, caregivers report a broad range of negative emotional states including anger, frustration, grief and loss. They also report elevated levels of negative caregiving experience (often described as burden), stress, distress, sleep and physical health problems (Brown & Birtwistle, 1998; Kuipers et al., 2010; Perlick, Hohenstein, Clarkin, Kaczynski, & Rosenheck, 2005). Stress and burden can be often long-term (Brown & Birtwistle, 1998), particularly raised at first onset and/or on following admission to an inpatient facility (Boye & Malt, 2002). Caregivers of people with psychosis report significantly smaller social networks and receive less emotional support than caregivers of people with long-term physical conditions (Magliano, Fiorillo, De Rosa, Malangone, & Maj, 2005). Rates of clinical depression can be high in caregiving samples with an estimated 30-40% reporting clinical levels (Addington, Coldham, Jones, Ko, & Addington, 2003). At least one third report trauma type symptoms (Barton & Jackson, 2008), and levels of 'burnout' reported by carers are not dissimilar to levels observed in psychiatric nurses (Angermeyer, Bull, Bernert, Dietrich, & Kopf, 2006).

The yearly cost of schizophrenia is approximately £11.8 billion (The Schizophrenia Commission, 2012). However, without caregivers this cost would be significantly more. For example, it has been calculated that relatives were saving the NHS more than £87 billion per year by providing unpaid care (Buckner & Yeandle, 2007). Poor outcomes in psychosis are expensive for the NHS and wider society; interventions that improve carer outcomes are thus likely to be cost effective. This is because carers who are able to deal with the challenges of their role and are less negatively affected, are more likely to maintain this role and their contribution to improved service user outcomes. It has also been clearly established that carers do have specific clinical and service needs of their own,

independent of the service-user, that deserve to be addressed (Kuipers, 2010; Onwumere, Bebbington, & Kuipers, 2011a).

4. NICE Guidelines for Schizophrenia (2002, 2009 update)

The National Institute for Health and Clinical Excellence guidelines for schizophrenia were first published in 2002 (NICE, 2002) and an updated revision was published in 2009 (NICE, 2009 update). A second update is due in 2014. The 2009 updated version makes recommendations for psychological therapy for people with schizophrenia spectrum diagnosis specifically, CBT for psychosis (CBT) and Family Intervention (FI).

The NICE guidelines (2009) state that FI should be offered to all families of people with schizophrenia who live with or are in close contact with the service user. Further, this can be started either during the 'acute phase or later, including in in-patient settings'. The guidelines specify that FI for psychosis should consist of the following: a) include the person with psychosis if practical; b) be carried out for between 3 months and 1 year; c) include at least 10 planned sessions; d) take account the whole family's preference for either single-family intervention or multi-family group intervention; d) take account of the relationship between the main caregiver and the person with psychosis; and e) have a specific supportive, educational or treatment function and include negotiated problem solving or crisis management work. The guidance states that FI will be of most utility for people with psychosis that have either recently relapsed or are at risk of relapse and/or for those that have persisting symptoms.

The guidelines suggest that services should aim to work in partnership with caregivers and provide information about psychosis and its management including a consideration of how families and caregivers can help throughout treatment; signposting and providing details of local support groups and voluntary organisations and help caregivers to access these. The guidelines also highlight the need to negotiate confidentiality and information sharing between the service user and caregiver, if necessary.

5. Family Intervention in psychosis

Family intervention is an evidence based psychological therapy designed to help families cope effectively with the impact that psychosis can have on family relationships. Several evidence based manuals (Barrowclough & Tarrier, 1992; Falloon, Boyd, & McGill, 1984; Kuipers, Leff, & Lam, 2002) have been developed, however they all tend to

include the following key components: providing support and information, reducing carer stress, improving communication and negotiated problem-solving.

6. Evidence for the effectiveness of Family Intervention

Substantial empirical evidence attests to the efficacy of FI in reducing relapse and readmission rates in psychosis (NICE, 2009 update), with more than 50 controlled trials of service user outcome. As part of a Cochrane trials review, Pharoah, Mari, Rathbone, and Wong (2010) reviewed 53 randomised controlled trials (RCTs) and reported that FI significantly decreased the frequency of relapse and hospital admission in service users with psychosis and encouraged medication compliance. FI is also known to reduce levels of carer burden (Cuijpers, 1999; Lobban et al., 2013), high levels of expressed emotion (EE), and improve social functioning in service users (Pfammatter, Junghan, & Brenner, 2006). In terms of caregiver outcomes, FI can improve the impact of care and commitment to caregiving (Girón et al., 2010). Evidence for the efficacy of FI in the early stages of the illness is beginning to accumulate (Onwumere et al., 2011a). The research suggests that FI may serve a preventative function, and may also improve the service user's future engagement with services (Bird et al., 2010).

7. Southwark Central Psychosis Community Service, London UK.

The Southwark Central Psychosis Community Service provides care for adults, aged 18-65, who live in the London Borough of Southwark and who have a schizophrenia spectrum diagnosis. All service users within this service are registered on the Care Programme Approach (CPA). This means that service users will typically have several people and/or organisations involved in their mental health care and treatment.

The Psychosis team consists of a team leader, six care-coordinators, one psychiatrist, one clinical psychologist and a vocational advisor. In addition, there is one FI worker who works full-time across the three community psychosis teams (Central, South and North West) in Southwark. The team caters for around 150 adults with psychosis diagnoses. Southwark is an inner district of London with a population of 288,300 (ONS, 2011). One third of the population are between the ages of 25 and 39 years. The population is ethnically diverse, with inhabitants from White (62%), Black (27%) and Asian (8%) backgrounds (ONS, 2011). It is the 9th most deprived London borough (of 32 boroughs) and is one of the four main localities served by the South London and Maudsley NHS Foundation Trust.

8. Local policy and implementation of the NICE Schizophrenia Guidelines: The Ten Point Charter

The South London and Maudsley (SLaM) NHS Foundation Trust policy for the implementation of the NICE guidelines for schizophrenia has been summarised in a Ten Point Charter (Garety, Bebbington, Fowler, Freeman, & Kuipers, 2007). The Charter offers guidance on the process of prioritising the delivery of psychological interventions in service users with a schizophrenia spectrum diagnosis within community teams. The charter specifies that 5% of service users with psychosis in regular contact with carers (i.e. at least 10 hours per week) should receive FI within each service.

Although FI has been recommended in NICE Schizophrenia guidelines (NICE, 2009 update), it has been extremely hard to implement in routine services, including SLaM, and is yet to be routinely available for families in the NHS, despite the established evidence base (Berry & Haddock, 2008; Prytys, Garety, Jolley, Onwumere, & Craig, 2011). A recent audit of the implementation of NICE Schizophrenia guidelines in the Southwark Central Support and Recovery team found that 26.4% of the team's caseload were listed as having close contact with a family member. However, only 2% were offered FI. Thus, the team was failing to meet the Ten Point Charter target for the provision of FI and not all caregivers' needs were being met (Day & Kuipers, 2011).

9. Obstacles to the implementation of NICE Schizophrenia Guidelines

Prytys et al. (2011) explored staff attitudes towards NICE guidance implementation and reported that positive views towards the guidelines were evident. However, barriers to implementation included high workload, competing time pressure, the need for specialist staff and pessimistic views of recovery for people with psychosis. It has been noted that there is a shortage of trained therapists and that systems for training and ensuring therapist competence are underdeveloped (Pilling & Price, 2006). In their review of barriers to the implementation of NICE guidelines, Berry and Haddock (2008) highlight a lack of staff skills as one of the key factors. A second barrier was the reluctance of service users and/or family to engage with psychological interventions. This point is particularly important for the delivery of FI, as it typically involves the service user and caregiver, and in cases where the service user refuses or is unable to engage, caregiver needs can go unmet.

Identified barriers to the implementation of NICE guidelines and delivery of FI, within the Southwark Central Psychosis Community Service include a shortage of trained staff, as outlined by NICE guidance, and that frequently service users are not happy to

engage with the service. This means that the service is unable to provide FI, or indeed any psychological intervention, to significant numbers of carers (Day & Kuipers, 2011).

10. Caregiver interventions

To date, there have been five randomised controlled trials (RCTs) of interventions aimed specifically at addressing the needs of carers. However, in all cases these have not translated into routine clinical practice. Three of these trials examined brief interventions (Posner, Wilson, Kral, Lander, & McIlwraith, 1992; Solomon, Draine, Mannion, & Meisel, 1996; Szmukler, Hermann, Colusa, Benson, & Bloch, 1996; Szmukler et al., 2003), one involved an intermediate intervention that lasted up to 6 months (Barrowclough et al., 1999) and one was of long-term psychoeducational intervention (Falloon et al., 1985). This latter intervention was the only one to demonstrate a reduction in carer 'burden', distress and coping; however, these results are yet to be replicated. In comparison, brief interventions were helpful in addressing caregiver knowledge and attitudes, while the 6-month intervention showed a reduction in the number of problems and service needs expressed by carers, but these were not translated into changes in reports of burden or distress (Szmukler et al., 2003).

11. A brief, needs led caregiver focused intervention in psychosis

Despite their valued contribution to service user outcomes, informal caregivers of people with psychosis remain a neglected group in clinical services and often feel marginalised (Kuipers, 2010). Caregivers do not routinely receive interventions themselves, despite the impact that their caregiving role can have on their own mental and physical health, and they are not readily identified as the responsibility of any particular service (Kuipers, 2010). Recent government policy acknowledges the importance of responding to caregivers needs and registering their outcomes (DoH, 2011) and the Department of Health has been leading an Increasing Access to Psychological Therapies (IAPT) Initiative, 2012-2013, for those with severe mental health problems- psychosis, bipolar disorder and personality disorder, which also extends to the provision of services for carers. The literature suggests that caregivers have identified needs for individually tailored information about psychosis, guidance on developing effective and adaptive problem solving and coping strategies, understanding and responding to early signs of relapse, and emotional support with regard to the impact of their role (Askey, Holmshaw, Gamble, & Gray, 2009; Shor & Birnbaum, 2012). For caregivers, it is also important that they are

supported throughout their relative's illness and not just in time of crisis (Askey et al., 2009). However, there is generally a lack of knowledge about caregiver's needs and how best these can be met by mental health professionals (Askey et al., 2009). Szmukler and colleagues (2003) found in their exploratory RCT of a two-phased intervention (defined by the authors as being of 'intermediate' intensity p.401) for carers of service users with psychosis that it proved very difficult to engage carers; with only a 42% participation rate. Thus, a brief, time-limited, needs-focused intervention might be more acceptable to carers and result in greater participation.

A brief intervention that can be offered to caregivers of service users with psychosis on an individual basis and that addresses their specific needs, might be helpful in reducing distress and improving well-being. The intervention will not require service users consent, because the focus is just on the caregiver. If such an intervention were successful, it might have the potential to be rolled out more broadly with care-coordinators taking a lead on delivery.

12. Summary

Up to 60% of service users with psychosis live with or remain in close contact with informal caregivers. These caregivers play a significant role in the recovery of service users and outcomes. However, caregiving roles are associated with considerable psychological morbidity. Despite their valued contribution to service user outcomes, caregivers of people with psychosis remain a neglected group in clinical services (Kuipers, 2010). In the Southwark Central Psychosis Community Service team it has proven difficult to offer NICE-recommended FI to all eligible caregivers. The available literature suggests that caregivers have identified needs for individual, tailored information about psychosis, understanding and responding to early signs of relapse, emotional support with regard to the impact of their role; and facilitation of adaptive coping and problem solving skills (Askey et al., 2009; Shor & Birnbaum, 2012). At the same time, it has previously proven difficult for researchers to engage carers in extended interventions (Szmukler et al., 2003). Providing brief interventions designed to meet the idiosyncratic needs of caregivers of service users with psychosis might address some of the barriers previously met in this service, while improving caregiver well-being and functioning.

13. Aims of the Service Evaluation

The principal considerations of this evaluation were to: a) examine what clinical needs caregivers might report and whether these can be delivered as part of a brief, evidence led, intervention over a small number of sessions; b) assess the effectiveness of the intervention in improving caregiver wellbeing; and c) assess the acceptability and caregiver satisfaction with the intervention.

14. The intervention

The brief, needs-led caregiver focused intervention is structured, interactive and theoretically grounded in the evidence based family interventions, but individualised to each carer's specific needs. Thus, the intervention will draw on the following: provision of knowledge about psychosis, support for caregivers and how to access it, creation of a relapse prevention plan, problem-solving and facilitating adaptive coping. It will be offered to carers in the team who are not receiving FI. Caregivers will first complete assessment measures on coping styles, how they make use of their time, affect, and the level of contact with the team. The measures will be re-administered at the end of treatment sessions and will be used as an indicator of the efficacy of the intervention. It is hoped that overall, this will help to reduce the levels of distress and improve well-being and satisfaction with the service among caregivers.

Method

15. Ethical approval

The South East London Research Ethics Committee (Ref no. 10/H807/18) granted approval for the intervention.

16. Criteria for participation

Inclusion criteria comprised any identified caregivers of service users registered within the Southwark Central Psychosis Community Service. Participants had to be in a caring role and satisfy any one of the following criteria: (i) a parent, spouse or partner of the identified service user and lived with the service user or (ii) lived with the service user and were willingly classified by themselves as being a caregiver; or (iii) did not live with the service user, but maintained three or more face-to-face weekly contacts with the service user (including three or more encounters). The total length of their weekly contact was at least ten hours including telephone calls.

Exclusion criteria were: i) insufficient command of spoken or written English to complete the measures and intervention; and ii) currently receiving a psychological intervention.

17. Measures

Caregivers completed these measures once before the start of the intervention:

Demographic information. Socio-demographic data were collected from carers including: age, gender, ethnicity, marital status, employment status, relationship to care recipient, if they were living with the person they care for, and whether they provided care for anyone else. Caregivers were also asked how often they have had difficulties getting to sleep in the past month, to describe their sleep quality in this time, and whether they had a confidant.

Measure of Contact with Relative's Care Team. This is a brief measure designed for the purposes of the current evaluation (See Appendix A). This assessed the level of contact the caregiver had with their relative's team, which team member they most frequently contacted, why they contacted them, how this contact took place and if they were satisfied with their current level of contact.

The following measures were administered after each intervention session. It was decided to employ two measures of depressive symptoms as one is employed routinely throughout SLaM (CES-D) while the other is frequently used in research (PHQ-9).

Clinical Outcomes in Routine Evaluation-10 (CORE-10) (Connell & Barkham, 2007). The CORE-10 is a brief 10 item self-report measure of global distress over the past week, including commonly experienced symptoms of anxiety (2 items), depression (2 items), trauma (1 item) and associated aspects of life and social functioning (4 items). There is also an item on risk to self. It includes high and low intensity items to increase sensitivity. Items are scored on a 5-point rating scale (0 [*'not at all'*] to 4 [*'most or all of the time'*]). The clinical score is calculated by collating the mean of all responses; thus scores range from 0-4, with higher scores indicating more distress.

Centre for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977).This is a 20-item self-report measure of depressive symptoms over the past week including depressed mood, feelings of worthlessness and hopelessness, loss of appetite, poor

concentration and sleep disturbance. Items are scored on a 4-point rating scale from 0 (*'Rarely or none of the time [less than 1 day])'* to 3 *('Most or all of the time [5-7 days])'*; higher scores indicate greater depressive symptomatology. It demonstrates acceptable internal consistency reliability (Roberts & Vemon, 1983) and construct validity (Knight, Williams, McGee, & Olaman, 1997).

Patient Health Questionnaire (PHQ-9) (Kroenke, Spitzer, & Williams, 2001). The PHQ-9 is a 9-item measure that asks how bothered the respondent has been by depressive symptoms over the 'last two weeks'. Items are scored on a 4-point scale from 0 ('*Not at all'*) to 3 ('*Nearly every day'*). If the respondent endorses any problems then they are required to complete a tenth item assessing 'how difficult these problems made it for you to do your work, take care of things at home, or get along with other people'. Scores are summed to yield a total score with higher scores indicating greater depressive symptomatology. Scores of five and greater indicate depressive disorder.

The Coping Orientations to Problems Experienced (COPE) Inventory (Carver, Scheier, & Weintraub, 1988).This is a multidimensional inventory consisting of ten scales that assess functional coping strategies (e.g., active coping, planning, seeking social support, acceptance) and five scales which assess dysfunctional coping strategies (e.g., denial, alcohol/drug use). Each scale has two items; yielding a total of 30 response items. Respondents were asked about their style of coping in dealing with the difficulties associated with their relative's mental health during the last three months. Coping responses are scored on a 4-point scale ranging from 1 (*'I have never done this')* to 4 (*'I have done this a lot'*). Behavioural disengagement, mental disengagement, alcohol/drug use and denial were summed to represent a general "avoidant" coping style (Onwumere et al., 2011b). Similar composite scores have been used in other studies (Raune, Kuipers, & Bebbington, 2004). Avoidant coping strategies are associated with psychological distress, emotional over-involvement, and increased carer burden (Cotton et al., 2013) and the need for interventions to reduce reliance on such maladaptive coping strategies has been highlighted (Onwumere et al., 2011b).

Time Budget Measure (Jolley et al., 2006).This measure assesses activity levels over a typical week, in four time periods completed retrospectively during a structured interview with caregivers (Jolley et al., 2006). It was originally designed for people with psychosis

(Jolley et al., 2006). Activities are scored based on the degree of planning, complexity and effort involved, and range from 0-112; higher scores indicate participation in more complex activities.

Session Evaluation Form. Caregivers were asked to provide feedback after each session and indicate how helpful each session had been and how satisfied they were after the session on 5-point rating scales; higher scores indicate higher ratings of helpfulness and satisfaction, respectively.

18. Caregivers

18. 1 Recruitment to the intervention. The team's family intervention worker identified caregivers who had expressed a current need for psychological intervention. These caregiver contact details were accessed via the electronic Patient Journey System (PJS) where they are detailed under the service users' information. If a contact telephone number for a caregiver was provided and they had indicated consent to be contacted on PJS, a telephone call was made to the caregiver. Caregivers were given a brief overview of the intervention and were invited to participate if they thought that they had needs that could be met by participating. If needs were identified an initial session was scheduled. If the caregiver indicated that they either did not have needs or were not willing to participate, they were asked if they would be happy to answer some questions about their level of contact with their relative's care team. In instances where no contact number was provided a letter was sent to the caregiver describing the evaluation and asking them to contact the trainee clinical psychologist (TCP) if they were interested in discussing participation.

In total, 13 caregivers were contacted; 11 via telephone and 2 via a letter posted to their home address (see Figure 1). Two caregivers (a husband and a daughter of a female service user) did not want to discuss their needs. They both reported that they were busy fulfilling their caregiving roles and they did not see the necessity of additional support from the team. Three caregivers (mothers of female service users) reported being distressed by the service users behaviour but did not think they had needs that could be addressed by the intervention. All of these caregivers reported that the service users' illness and/or behaviour would need to change before their levels of distress reduce and that services should be concentrated on the service user. One caregiver (husband of a female service user) reported that he did not have needs at this time, as the service user was doing

well. However, he felt that additional support would be helpful at a point in the future were she to become unwell again.

Five caregivers agreed to meet with the TCP to discuss their needs and the possibility of participating in the intervention. At the first meeting, one caregiver identified her needs as being practical and financial and did not agree to participate. These needs were relayed to her son's care coordinator. Four (4/13) caregivers agreed to participate at this initial meeting and they completed all outcome measures and identified their goals for individual intervention sessions.

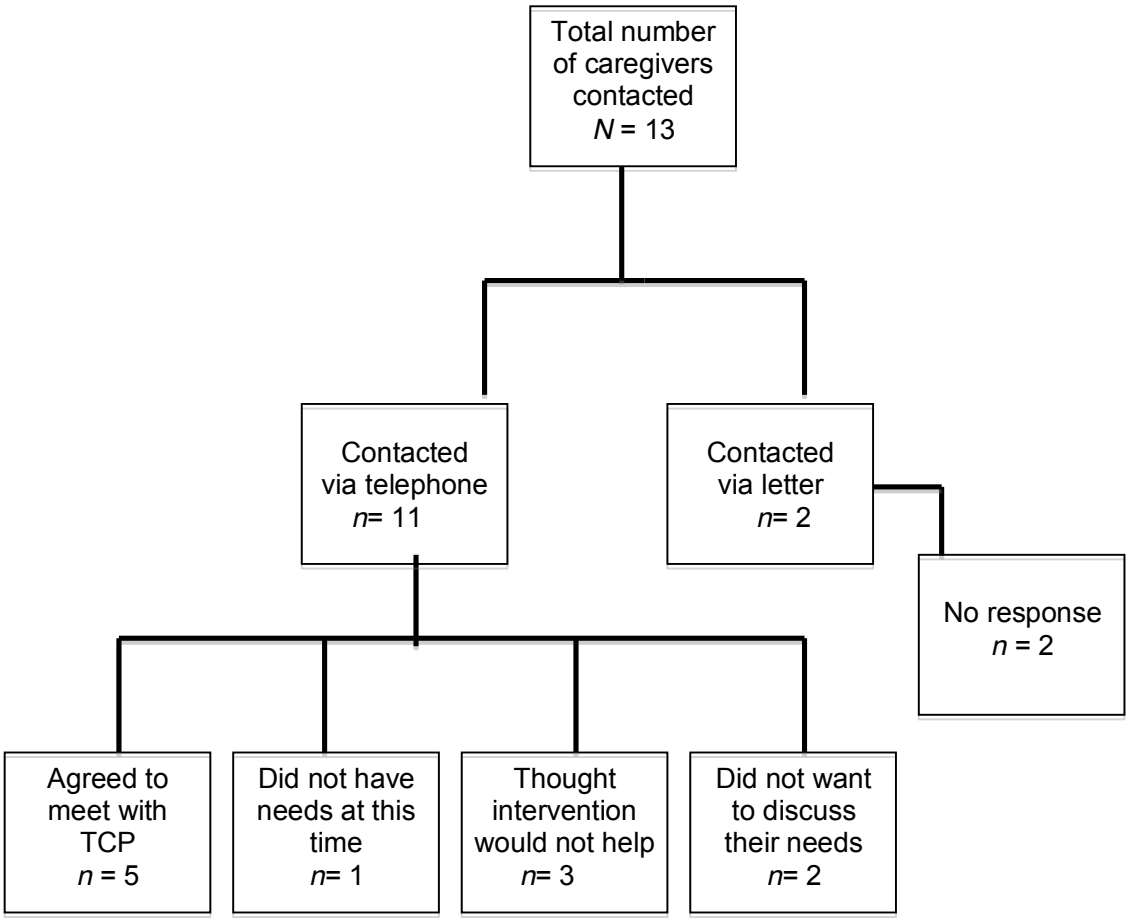

Figure 1. Diagrammatic representation of caregivers involvement in the intervention.

18. 2 Caregiver demographics. Of the 13 caregivers initially contacted, five were mothers, three were sisters, two were wives, two were husbands and one was a daughter of the identified service user. Neither of the two caregivers contacted by post (a sister of a female service user and a wife of a male service user) responded to the invite to participate in the intervention. Thus, no further information is available for them.

Detailed demographic information for the four caregivers who had individual intervention sessions is presented in Table 1. All four caregivers were female, unemployed and drawn from Black and Minority Ethnic (BME) groups (n = 2 Black African, n = 1 Black Caribbean, n = 1 Indian). Their average age was 41 years and 6 months (SD =11 years 5 months).

Table 1

Summary of caregiver demographics for those that agreed to meet with TCP and completed outcome measures (N = 4)

Demographic Information	No. of Caregivers
Age	
30 years +	2
50 years +	2
Ethnicity (self-report)	
Black African	2
Black Caribbean	1
Indian	1
Marital Status	
Single	3
Married	1
Occupation	
Unemployed	4
Relationship to Service-User	
Mother	1
Wife	1
Sister	2
Living with person they care for	
Yes	2
No	2
Provide Care to Others	
Children	3
Parents (in-law)	1
No other	1
Difficulty getting to sleep in last month	
One night a week	1
Most nights of week	2
Every night of week	1
Quality of sleep in last month	
Poor	3
Very Poor	1
Confidant	
Yes	4
No	0
Relationship Status	
Married	1
Single	2
In a relationship	1

18.3 Intervention goals. In the first session, caregivers identified their primary needs, and individual goals to address these were devised. Caregiver A wanted to achieve the following: (i) identify how to manage a crisis; (ii) get information about how to access personal support; (iii) problem-solve how to make time to study for her college course; (iv) access information about symptoms; and (v) improve her sleep. Caregiver B wanted to obtain some information on symptoms of psychosis and how she could access personal support. Caregiver C wanted (i) information about the aetiology of psychosis; (ii) information about culturally-appropriate treatments in her community; (iii) access information about treatment guidelines; and (iv) to think about her ability to cope with her relative's illness. Caregiver D identified the following goals: to (i) access information about culturally-appropriate treatments in her community; (ii) to access information on the aetiology of psychosis; and (iii) to make time to achieve her personal goals.

18.4 Intervention sessions. Following the initial assessment session, caregivers then had a further 2-3 individual intervention sessions (approximate length 2-3 hours, in total), which took place either at the CMHT base or the caregiver's home. The content of individual sessions with caregivers was planned in advance by the trainee clinical psychologist (TCP) in consultation with Dr. Juliana Onwumere and Professor Elizabeth Kuipers. At the end of each session, progress in achieving desired goals was ascertained and the following session was arranged.

For all caregivers, Session 1 involved facilitated and supported access to the www.mentalhealthcare.org.uk website which included accessing resources (including videos and links to other useful websites and previous questions that were answered by psychologists) and discussion of an information pamphlet on psychosis. Also in this session, caregivers were given information and time to think about how they might improve their sleep. Caregivers A and B were also given information on their local IAPT services. Both caregivers C and D requested information on the NICE guidelines and the consideration given to race and ethnicity in the treatment of psychosis.

For Caregiver A (wife, 31 years old), Session 2 was spent helping this caregiver to problem solve how she could make time to study for a college course while also managing her household duties, the family budget, arrange child care, and employ some techniques to try and improve her sleep. The steps necessary to implement solutions were also discussed. For Caregiver B (sister, 51 years old), Session 1also involved her telling her story of how she had come to care for her brother. The second session involved discussing some of the information from Session 1 and setting personal goals that she would like to achieve.

Session 3 was focussed on helping the caregiver find information about her brother's behaviour and problem solving how she might interact with the medical professionals that were caring for him on an inpatient ward.

Caregiver C (mother, 52 years old) was particularly interested in accessing information about the aetiology of psychosis and the relationship between cannabis use and psychosis in Session 1. She was also provided with information and contact details of African mental health support services in her community and on local caregiver support groups. Session 2 involved further discussion of the aetiology of psychosis and goal setting. Current (getting more sleep), short-term (making time for herself to relax) and long-term goals (learn how to drive) were considered. Caregiver C was unable to attend Session 3 for medical reasons.

In Session 1, Caregiver D (sister, 32 years old) specifically wanted information about the link between migration and psychosis. Session 2 involved setting immediate (smoking cessation, increase activity) and long-term goals (establishing a career, buying her own home) and problem-solving how she might work to achieve them.

Results

19. Contact with relative's care team

Eight caregivers (including the four who participated in intervention sessions) completed the contact with care team measure. The level of contact between carers and the team varied from weekly intervals to once a year (see Table 2). Contact typically happened when their relative was in crisis and via telephone. The service users' care coordinator was identified as the person all caregivers had the most contact with. For all caregivers, the main purpose of their contact was to discuss their relative's wellbeing. Identified obstacles to contact with the team frequently involved the care coordinator. For example, the service user's care coordinator frequently changing, the carer not being able to contact the care coordinator directly and the care coordinator not returning phone calls promptly. The reported benefits of contact with the team included having support in times of emergency and specific help with medication.

Table 2

Summary of caregivers' contact with their relatives' care team (N = 8).

	No. of Caregivers	% of Caregivers
Frequency of contact		
Weekly	2	25
Bi-weekly	1	12.5
Monthly	2	25
3 Months	2	25
Yearly	1	12.5
Circumstances of contact		
Relative unwell	7	87.5
Relative is both well and unwell	1	12.75
Type of contact		
Telephone	8	100
Person contact most often		
Care-coordinator	8	100
Purpose of contact		
Relative's well-being	8	100
Obstacles to contact		
Relative's illness behaviours	1	12.5
Care-coordinator not responding to calls	1	12.5
Care-coordinator changing regularly	1	12.5
No contact details for care-coordinator	1	12.5
Different approaches of care-coordinator	1	12.5
No obstacles	1	12.5
Satisfaction with current contact	1	
Neutral	5	62.5
Satisfied	2	25
Very unsatisfied	1	12.5
Benefits of having contact		
Know who to contact in emergency	2	25
Helpful to keep track of relative	1	12.5
Help and support when relative is missing	1	12.5
Check if relative is medication compliant	1	12.5
Get current information about medication	1	12.5
Ask about services for relative	1	12.5
Ask about welfare issues	1	12.5
Feel less alone and more supported	1	12.5

20. Caregiver outcomes

Table 3 shows caregivers' scores on the outcome measures at baseline and post intervention. A reliable change index (RCI) was calculated for participants' pre- and post-intervention scores on these measures. The RCI provides an indication of whether changes in these scores following the intervention were statistically significant. It was calculated by getting the difference in carers' individual pre-intervention and post-intervention scores, divided by the standard error of the difference. If an RCI is greater than 1.96 then the

difference is statistically significant (Jacobson & Traux, 1991). As the type of coping style used by carers was assessed, no RCI was computed for this variable.

Table 3

Caregivers scores on outcome measures at baseline and post intervention (n = 4)

Carer	CORE-10			PHQ-9			CES-D			Time Budget			Cope	
	Pre	Post	RCI	Pre	Post	RCI	Pre	Post	RCI	Pre	Post	RCI	Pre	Post
A	0.4	0.4	0	11	3	-1.6	32	19	-1.81	80	97	2.29*	>F	>F
B	1.7	0.5	-2.16*	2	2	0	21	12	-1.25	64	70	0.81	F+A	F+A
C	1.0	0.6	-0.72	10	6	-0.80	24	22	-0.28	75	-	-	>F	-
D	0.9	0.5	-0.72	5	6	0.20	13	14	0.14	85	85	0	> F	<F

Note. * indicates a statistically significant RCI.

Caregiver A reported levels of distress on the CORE-10 that were in the normal range at both assessments. Her initial PHQ-9 score was in the range for moderate depression, but post-intervention she was scoring in the normal range. On the CES-D, both pre and post scores were above the threshold for depression; however, her score did reduce by 13 points. On the time budget measure, she was spending a lot of her time engaged in a variety of demanding independent activities requiring motivation and planning at baseline, and this had significantly increased post intervention. For example, she was looking after her three children and also her relative. In addition to this, she also cared for her mother-in-law one day a week and helped prepare meals for her extended family at weekends. At the end of the intervention this caregiver was engaged with more self focused activities; attending college one day a week. She engaged in more functional than avoidant strategies at both assessments, suggesting that she was using helpful strategies to manage the caring role which were unlikely to contribute to her overall distress.

Caregiver B reported moderate levels of distress on the CORE-10 at baseline that were significantly lower and in the normal range post intervention. On the PHQ-9 she did not score in the range for depression at either assessment. Her pre-CES-D score fell above the cut-off for depression and her post score was below the threshold for depression. On the time budget measure, she was spending half of her time engaged in demanding activities and this did not significantly change. For example, she was spending time on household chores including shopping and paying the bills but was also spending similar amounts of time watching television or visiting family and friends. She was engaged in both avoidant and functional coping strategies at assessments.

Caregiver C reported low-levels of distress that were in the clinical range on the CORE-10 at baseline, which then fell in the healthy range following the intervention. On the PHQ-9, her scores remained in the mild clinical range. On the CES-D, she was below the threshold for depression at both assessments. On the time budget measure, this caregiver was spending a lot of her time engaged in tasks that required significant motivation and planning. For example, she was looking after three teenage children and responsible for running the household. Three evenings a week she was attending a computer course at a local college. She was also engaged in more functional than avoidant strategies. These two latter measures were taken at baseline only.

Caregiver D reported mild distress on the CORE-10 at baseline and scored in the normal range following the intervention. Her scores on the PHQ-9 were in the range of moderate depression at baseline and mild depression post intervention. On the CES-D her

scores remained above the cut-off for depression. On the time budget measure, she reported engaging in activities that required significant motivation and planning and this did not significantly change. For example, she was working as an administrator one day a week for a property management firm as well as caring for her son and niece and managing the household finances. This caregiver was using more functional than avoidant coping strategies and this remained constant.

21. Caregiver satisfaction and acceptability of the intervention

Caregivers rated their satisfaction with the intervention at the end of each session. The average session satisfaction was 4.16, indicating high levels of satisfaction (*5* = high satisfaction; *0* = low satisfaction). Caregivers were also asked for feedback at the end of each session. These data were analysed using the inductive thematic analysis procedure outlined by Braun and Clarke (2006). Caregivers emphasised the importance of being given time and space to talk and this was related to feeling valued by their relative's care team. It was important to caregivers that the sessions were based around their individual needs, and for two caregivers these involved discussing the role of ethnicity in their understanding of the aetiology and treatment of their relative's illness. Caregivers emphasised the helpfulness of resources and materials, including the www.mentalhealthcare.org.uk website, in providing useful information about psychosis but also about their management of their relative. The importance of receiving support at various points throughout their relatives' illnesses, and not just at times of crisis was highlighted. Finally, for some caregivers the sessions allowed them to re-evaluate their situation in a more positive manner and in this way broadened their perspective.
All caregivers reported that the intervention was helpful and acceptable and that they would engage with it, if their relative's care team routinely offered it.

Discussion

22. Overview

The aim of the current evaluation was to determine the feasibility and effectiveness of a brief, needs led intervention for caregivers of service users from the Southwark Central Community Psychosis Service. Four caregivers reported needing psychological support and participated in the intervention. That these caregivers needed this type of support remains consistent with research that shows carers are in need of emotional support, information and advice to help them to cope with their role (Shor & Birnbaum, 2012). The

results from the current pilot intervention offer early indications that structured and individualised intervention sessions may be helpful in improving caregiver well-being. On completion of the study, all caregivers reported high levels of satisfaction and that they would engage with such an intervention were it routinely offered by their relatives' care team.

Of those 13 caregivers who were initially contacted about the intervention, four agreed to participate in the sessions. It would therefore seem that such an intervention may not be taken up by all carers if it were offered routinely within clinical services, with only one third in the current service accepting the invitation to participate. As mentioned previously, difficulty with engaging carers in interventions has been noted in the research literature with Szmukler et al. (2003) reporting a take-up rate of 40% while Barrowclough et al. (1999) reported a participation rate of 50% in their effectiveness trial of a needs-based psychosocial intervention service for carers of people with schizophrenia.

The fact that these current carers were offered help within the context of a research project may have possibly contributed to the low rate of uptake; however, it is unlikely that this is the main reason. For example, some carers indicated that they did not think that such support would be sufficient to improve their well-being and the behaviour of the service user would need to change first to achieve this. Moreover, they felt that services should be directed at the service user. It could be that these carers are attributing all responsibility for change to their relative. The importance of carer attributions in psychosis has been widely discussed in relation to measuring the family environment (Barrowclough & Hooley, 2003; Hooley, 1985); with research showing that high EE carers are more likely than low EE carers to believe that patients are in control of their symptoms (Brewin, MacCarthy, Duda, & Vaughn, 1991). Therefore, it may be more difficult to recruit carers who attribute control to the service-user and this will need to be considered in the future design of caregiver interventions. However, alternatively, it is possible that such carers could be saying that improved care of their relative will help to reduce the burden that they experience. Improved care for the service-user has been identified as a need of carers in other research (Askey et al., 2009; Repper, Grant, Nolan, & Enderby, 2005).

There was also a sense that, for some carers, the intervention was considered a burden when the current situation, though difficult, may not have been a crisis. It has been suggested that participation in carer interventions might be higher if help is offered during a crisis (Szmukler et al., 1996). It is interesting then that those caregivers who participated in the intervention indicated that support would be helpful both during a crisis and when

the situation is less extreme. This desire to be contacted in addition to a crisis is also consistent with what carers elsewhere have reported (Askey et al., 2009; Repper et al., 2005) These carers seem to have different needs with respect to support from their service-user's care team, with some wanting more consistent support and others help only at times of crisis.

23. Effectiveness of the intervention

Baseline data showed that three of the four caregivers were scoring above the threshold for depression. For all caregivers, their scores either remained in the same range of functioning or improved on the CORE-10, PHQ-9 and CES-D post intervention. It is of interest to note inconsistencies in the level of severity of depressive symptoms across the PHQ-9 and the CES-D. For example, Caregiver A did not fall within the range for depressive disorder on the PHQ-9 but was above the cut-off for the CES-D when symptoms were reported post intervention. A similar trend was noted for Caregiver B at baseline. Caregiver D was below the cut-off for depressive disorder on the CES-D but scored in the range of mild depression on the PHQ-9, both at baseline and post intervention. One possible explanation for these inconsistencies could be that the PHQ-9 requires participants to report on symptoms '*over the past two weeks'* while the CES-D requires report '*for the past week'*. However, research that has employed both these measures tends to report consistency in the severity of depression reported (Milette, Hudson, Baron, & Thomas, 2010).

Caregivers A, B and C were engaged in activities that required significant planning and motivation at baseline. For Caregivers A and B, time spent on such activities increased following the intervention. For Caregiver A, this was a statistically significant increase. Of note on this measure were the types of activities caregivers were engaged in. All caregivers were spending the majority of their time focused on meeting the needs of others (e.g., their relative with psychosis, offspring, and other family members) with very little time spent addressing their own needs, goals or interests. It was interesting that all caregivers wanted to use intervention sessions to think about how they might make time to achieve their own personal goals and problem solving around these. Several caregivers also reported feeling guilty about prioritising personal goals throughout the intervention.

Three of the four caregivers were using more functional that avoidant coping strategies. Research shows that avoidant coping responses tend to be more evident among caregivers with negative caregiving relationships and those reporting greater distress and emotional involvement (Cotton et al., 2013; Onwumere et al., 2011b; Raune et al., 2004).

It would seem that most of these caregivers were already engaging in adaptive strategies and no changes were observed in coping strategies after the intervention.

As stated, caregivers reported high levels of satisfaction with the intervention and could identify why they had benefitted from being involved. Caregivers indicated that they would engage with such a service if it were offered by the Southwark Central Psychosis Community Mental Health Team. They reported that it would be helpful if this service was first offered when their relative was unwell so that they could access information and support early on, as well as in times of crisis. A common theme in research into carer needs at the time of their relative's first episode of psychosis is that help was not received early in the course of illness and high levels of confusion exist about who to contact during the initial stages (Askey et al., 2009; McCann, Lubman, & Clark, 2011; Sin, Moone, & Wellman, 2005). There is evidence that at illness onset most families only receive information, a clear plan of who to contact and the offer of on-going support (Slade, Holloway, & Kuipers, 2003). At the same time, it appears that the need for intensive family work is not over-whelming in the early stages of illness (Slade et al., 2003), thus, a brief needs-led caregiver focused intervention, such as that detailed in the current work, might be more acceptable to carers as well as effective in addressing their needs at this time.

24. The importance of a specific caregiver service

The importance of a service that can meet the specific needs of caregivers has been highlighted. It appears that there is consistency in terms of what caregivers are reporting that they need. Thus, a structured approach that can be individualised and responsive to caregiver needs and flexible in its ability achieve them could be implemented. As is evident from the results, there were similarities in terms of what caregivers wanted to work on within sessions (e.g., to access information), but the content of sessions was individualised to address caregiver's specific concerns (e.g., information about migration and onset of psychosis). Caregivers reported that it was because sessions were organised around their own situation that they found them beneficial. Therefore, a service that can respond to caregiver's needs in this way is indicated.

25. Caregiver's contact with care team

In addition to evaluating the effectiveness of a brief caregiver intervention, data were also gathered on caregiver's level of contact with their relative's care-team. Eight

caregivers provided this data. In comparison with a study conducted in the United States where 61% of therapists reported at least one yearly contact with family members of patients with SMI (Dixon, Lucksted, Stewart, & Delahanty, 2000), in the current evaluation, all of the caregivers had at least one yearly contact with their relative's team. Similar to that study, contact was typically made during crises, when the service user was unwell and contact was by telephone. However, interactions were infrequent and focused on service user's needs; no caregiver reported any contact to be directly about their own personal well-being. The care coordinator is an important point of contact for caregivers and the person they are the most likely to have contact with compared to other team members. At the same time, some of the obstacles to contact that were identified were to do with the care coordinator (e.g., not returning calls, frequent changes in care coordinators, not having contact details). Interestingly, an investigation of the relationship between continuity of care and the characteristics of CMHT service-users showed that consistent care coordination from a designated care coordinator was significantly more likely to be received by service-users who had no formal caregivers and those that had frequent hospitalisations (Catty et al., 2011). Therefore, it is possible that the carers in the current pilot did not have consistent contact with their relative's care coordinator because the care coordinator might have directed greater resources towards managing the care of people without carers.

26. Feasibility of the intervention

The average length of the current intervention was 2 hours 45 minutes and involved one TCP. In comparison, with NICE compliant FI work which typically involves two professionals meeting with a family for at least ten planned sessions over a period of 3-12 months, the current intervention was less demanding in terms of time commitment, and staff resources. It also was not dependent upon the involvement of the service user. This latter point is particularly important, as currently family intervention is only offered when the service user agrees to participate. In contrast, this intervention was able to directly meet caregivers' need.

As discussed previously, a recent audit of the implementation of NICE Guidelines in the Southwark Central Psychosis Community Service found that only 2% of the eligible families were actually offered FI. This means that the teams are currently not reaching even a low target for provision of FI set out by the SLaM Ten Point Charter (5%). The

current data suggest that a brief, time-limited, needs focused intervention might be feasible and with care coordinators possibly taking a lead on delivery.

The IAPT service model recommends a system of stepped-care with relatively brief or low intensity treatments offered for mild-moderate mental health problems and high intensity treatments for more severe difficulties. The implementation of such a service model for the provision of FI across the Community Psychosis teams would be of potential benefit to both the caregivers and the service. It would permit a process of triage such that caregivers in need of brief individualised intervention sessions could be seen by one mental health professional for a limited number of sessions working on specific goals. Consequently, those families in more distress and in need of a longer-term high intensity intervention could be prioritised and seen by the family intervention worker and a clinical psychologist. According to Prytys et al. (2011) obstacles to the implementation of NICE guidelines included severe workload, time pressure and need for specialist staff. An additional advantage of triaging the provision of FI work is that sessions could be delivered by other mental health professionals within the team who would not need extensive training (e.g., care coordinator; akin to psychological well-being practitioners in the IAPT service model) thus, the FI worker would have more time to engage in NICE compliant FI work with those who need it at that time.

27. Feedback of current findings to Southwark Central Psychosis Community Team

After the project was completed, the results were fed back and discussed with the staff of the Psychosis Team who thought it was important and feasible to have resources and information readily available that could be easily provided to caregivers.

28. Limitations of the intervention

A key limitation of the current intervention was the small sample size ($N = 4$) and lack of power to test the effect of the intervention. Additionally, there was homogeneity in the sample: caregivers were all female and drawn from BME groups. A second limitation was the absence of a control group, and inclusion of only pre- and post- intervention measures. A third limitation was the observed discrepancy on the CES-D and PHQ-9 measures. Namely, Carer B was scored above the threshold for depression on the CES-D but not on the PHQ-9, thus calling to question the validity of these measures and the meaning of changes in scores from pre-post the intervention. The findings need to be replicated and completed with a larger and more diverse sample. It would be useful to complete a

randomised intervention with a control group, and determine any long-term effects of such interventions on caregiver distress and well-being, and on service user outcomes.

29. Conclusion

Offering brief, individualised and structured supportive sessions to long-term caregivers of service users with psychosis was found to be helpful, feasible and acceptable to carers and team members. If positive outcomes from the small pilot were replicated with a larger sample and compared against a control group, this intervention has potential to improve access to psychological help to caregivers of those with psychosis within the Southwark Central Psychosis Community Service. The Department of Health has been leading an Increasing Access to Psychological Therapies Initiative, 2012-2013, for those with severe mental health problems- psychosis, bipolar disorder and personality disorder. Such interventions as described here might be a helpful addition to a range of 'family friendly' support that carers of those with psychosis might benefit from.

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Appendix A: Measure of Contact with the team

Measure of Contact with Team

Please circle the selected response

1. HOW OFTEN DO YOU TALK TO YOUR RELATIVE'S CARE TEAM?

Weekly Bi-weekly Monthly

Bi-Monthly Every 3 months Every 6 months Yearly

2. **DO YOU TALK TO YOUR RELATIVE'S CARE TEAM WHEN**:

Your relative is well

Your relative is unwell

Both when your relative is well and unwell

3. WHAT TYPE OF CONTACT DO YOU TYPICALLY HAVE WITH YOUR RELATIVE'S CARE TEAM?

Face to face Telephone contact Letter

4. WHO ON YOUR RELATIVE'S CARE TEAM WOULD YOU HAVE THE MOST CONTACT WITH?

Care-coordinator Pharmacist

Team Leader Support Worker

Psychiatrist Key Worker

Psychologist Social Worker

5. IN GENERAL, WHAT IS THE PURPOSE OF THIS CONTACT:

Concerned with your relatives well-being

Concerned with your wellbeing

6. ARE THERE ANY OBSTACLES THAT PREVENT YOU FROM BEING IN CONTACT WITH YOUR RELATIVE'S CARE TEAM?

My relative is unhappy for me to be in contact with the team

I am unsure of who on the team to contact

I cannot get in touch with members of the team

I don't think it is necessary for me to be in contact with the team
Please indicate any other obstacles you have experienced:

_____

_____

_____

_____

7. **HOW SATISFIED ARE YOU WITH YOUR CURRENT LEVEL OF CONTACT WITH YOUR RELATIVE'S CARE TEAM?**

VERY SATISFIED | SATISFIED | NEUTRAL | UNSATISFIED | VERY UNSATISFIED

8. **PLEASE LIST THE BENEFITS OF CONTACT WITH YOUR RELATIVE'S CARE TEAM**

Main Research Project:

An investigation of the relationship between psychotic-like experiences and adverse life events in 8-14 year-olds

Supervised by Dr. Suzanne Jolley, Dr. Patrick Smith & Dr. Sophie Browning

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ABSTRACT

Background: Psychotic-like experiences (PLEs) are a common occurrence for children and adolescents. Although usually transitory, they are associated with increased risk of mental health problems, for some young people. Adult research suggests both phenomenological and dose-response associations between psychosis and negative or traumatic life events. Understanding the relationship between negative life events, bullying and PLEs, in children and adolescents, is therefore clinically important. The current study examined the relationship between self-reported and parent-reported PLEs and adverse life events in a sample of clinically-referred 8-14 year-olds.

Method: Participants were recruited from CAMHS waitlists, as part of a larger randomised controlled trial. Ninety-six children completed measures of negative life events, bullying and PLEs. Parents for 36 of the young people completed a measure of negative life events and parents for 33 of these young people also completed a measure of PLEs. Content associations between PLEs and adverse life events were examined for the 25 young people who completed a comprehensive assessment of life events as part of the trial intervention.

Findings: Children self-reported higher rates of PLEs than their parents had observed, while reports of negative life events were consistent across respondents. Negative life events and bullying were significantly associated with PLEs. A dose-response relationship was found between upsetting negative life events and the likelihood of experiencing a distressing PLE. Content analysis of PLEs and adverse life events showed direct associations for 56% of participants, and indirect associations for 94%.

Conclusions: These findings replicate and extend adult research to a younger sample of clinically-referred youth, highlighting important associations between PLEs and adverse life events. Implications for intervening with young people experiencing PLEs to reduce clinical risk are discussed.

Chapter 1: Psychotic-Like Experiences and Adverse Life Events

This chapter sets the scene for the current research. It starts by introducing the importance of early intervention in psychosis and highlights the significance of psychotic-like experiences (PLEs) as early indicators of vulnerability to the future development of disorder. The prevalence and clinical significance of PLEs are presented before the thesis turns to consider the relationship between these experiences and adverse life events.

1.1 Psychosis and Early Intervention

Psychotic disorders are serious mental illnesses that typically emerge during the sensitive developmental period of adolescence or early adulthood. The traditional view of the disorder has been characterised by pessimism, with Kraepelin's inclusion of a poor prognosis as a diagnostic criterion (Zubin & Spring, 1977), and high levels of stigma (Mestdagh & Hansen, 2014). However, the previous two decades have seen the rise of the 'early intervention movement' which advocates for immediate access to care and comprehensive treatment at the first signs of illness in an attempt to improve outcome (Yung et al., 2003). Early intervention in the mental health of young people has been recognised as a Department of Health priority (2007; 2012). More recently, the National Institute for Health and Clinical Excellence (NICE; 2013) have emphasised the need to 'refer for assessment without delay' (p. 7) any young person who experiences transient or attenuated psychotic symptoms or other experiences that might indicate possible psychosis. The urgency in accessing care is warranted as longer durations of untreated psychosis (DUP) lead to more severe global psychopathology, more positive and negative symptomatology, poorer functional outcomes, and more marked structural brain abnormalities (Keshavan & Amirsadi, 2007). Furthermore, prognosis is worse with childhood onset and this in turn is associated with higher levels of distress and deleterious consequences for young people's personal, social, educational and occupational functioning (NICE, 2013).

1.1.1 Increased risk for psychosis. Psychosis typically begins with a prodromal phase, first characterised by non-specific symptoms, which are often followed by gradual increases in positive psychotic-like experiences, negative symptoms, and deterioration in functioning, before the onset of a full-blown psychotic episode (Gross,

1997). Prodromal populations are characterised by sustained subjective and behavioural changes, including distress, social withdrawal, interpersonal difficulties and problems in their educational and vocational performance in the absence of a clear psychotic disorder (Yung et al., 2003). The prodrome may be lengthy, lasting on average between one and five years (Yung et al., 2004).

1.1.2 Early intervention strategies. Recognition of the prodromal phase has resulted in the development of early intervention strategies for the treatment of help-seeking individuals who are at increased risk (Yung et al., 2012). As highlighted, early intervention in psychosis is specified by NICE (2013; 2014) and aims first to alter the transition to psychosis, either by delay or outright prevention, and second to treat any concurrent difficulties (e.g., low mood or anxiety). Further benefits of intervention at an early stage include lower transition rates, better engagement and reduced likelihood of inpatient admission (Kendall, Hollis, Stafford, & Taylor, 2012; McGlashan et al., 2003; McGorry et al., 2002; Morrison et al., 2004; Stafford, Jackson, Mayo-Wilson, Morrison, & Kendall, 2013; Yung et al., 2003). Early intervention is typically in the form of psychotherapy (Cognitive Behavioural Therapy [CBT] and Family Intervention) and pharmacotherapy; however, there is limited evidence for the efficacy of the latter with children and adolescents and concerns have been expressed about increased sensitivity to side effects among younger populations (NICE, 2013). Psychological interventions are now being employed with young people and evidence for their efficacy is accumulating (e.g., CBT; Maddox et al., 2013).

The early intervention movement advocates preventative thinking about psychosis. It is now recognised that poor prognoses and deteriorations in function may be avoided and that the disorder is more amenable to intervention than suggested by original conceptualisations (Drake, Haley, Akhtar, & Lewis, 2000; Marshall et al., 2005). Early detection and intervention are crucial to good outcome.

1.1.3 Identification of individuals at increased risk for psychosis. One issue that has thwarted the early detection of at-risk individuals has been the lack of an effective identification strategy. Reliance on a positive family history is problematic in that less than 40% of adults with a psychotic disorder have an affected relative (Gottesman & Erlenmeyer-Kimling, 2001). The use of prodromal symptoms

exclusively as a strategy for the identification of increased risk for a psychotic episode yields high rates of false positives. However, more specific criteria developed by Yung and colleagues (2007), to increase the accuracy of identification and delineating three distinct prodromal categories, indicate transition rates of over 34% within 6 months to 15-54% within 12 months (Haroun, Dunn, Haroun, & Cadenhead, 2006; Miller et al., 2003).

An alternative and arguably more productive method is to use sub-clinical psychotic symptoms as an indicator of vulnerability (Laurens, Hodgins, West, & Murray, 2007). These symptoms or PLEs may serve as a potential biomarker for psychosis, and indeed the prodrome, and there is emerging evidence that PLE impact, distress and poor coping are associated with the persistence of these symptoms into adolescence (Lin et al., 2011). PLEs are therefore important markers of increased risk for psychosis and at the same time, if associated with distress or adverse life impact, are obvious targets for clinical treatment. Proactive and preventative intervention with these experiences is in keeping with the NICE guidelines (2013) which stipulate that when transient or attenuated psychotic symptoms or other mental state changes are associated with distress, impairment or help-seeking behaviour, not sufficient for a diagnosis of psychosis, that individual CBT with or without family intervention should be offered. While the majority of children who report PLEs are not distressed by them, data from community samples show that around 17.4% of 9-15 year-olds do report impact on their lives, and emotional or behavioural problems in the clinical range (Laurens et al., 2007).

1.2 Psychotic-Like Experiences

Given the importance of PLEs, both in terms of the current study, and, more generally, in terms of an understanding of psychotic disorder, relevant literature is summarised below. In young people, visual and auditory hallucinations and paranoid ideation are the most commonly reported PLEs (Kelleher et al., 2008).

1.2.1 The prevalence of PLEs. Population-based studies using both self-report and interview measures show that the prevalence of psychotic experiences in the general population is much greater than had been previously considered. For example, the first meta-analysis of this literature suggested a prevalence rate of 5-8%, which is

almost ten times higher than the prevalence of diagnosed psychotic disorders (van Os, Linscott, Myin-Germeys, Delespaul, & Krabbendam, 2009). These experiences are evident in both clinic and general population samples (McGorry et al., 2007), to varying frequencies and intensities. As a broad category, PLEs include beliefs that may appear odd to others, and altered perceptions such as hearing, seeing or feeling things that others do not perceive.

Prevalence rates tend to be higher for children and adolescents. Large, population-based studies surveying these symptoms among adolescents have found rates of 9-14% in interview-based studies (Bartels-Velthuis et al., 2010; Horwood et al., 2008) and over 60% in some studies employing self-report measures (Kelleher, Harley, Murtagh, & Cannon, 2011; Laurens et al., 2007; Yung et al., 2009). Variation is likely due to measurement differences, including the nature of the sample and instrument employed. However, a recent meta-analysis of prevalence studies, demonstrates a median prevalence of 17% for 9-12 year-olds and 7.5% for 13-18 year-olds (Kelleher et al, 2012a). The observed trend of reduced prevalence of PLEs with increasing age has been reported elsewhere in the literature (Laurens et al., 2011). It is possible that reduced prevalence in older samples might reflect a normal tapering off of these experiences with age, or a change in attribution or meaning (e.g., van Os et al., 2009). Interestingly, prevalence estimates based on parental report tend to be lower than self-report (Kelleher et al., 2011; Laurens et al., 2007). Several possible processes may be operating here. For example, children might not tell their parents about PLEs, or parents might appraise PLEs in a different way, or might even be reluctant to endorse these items explicitly.

In sum, PLEs are relatively common experiences for children and adolescents and appear to be age-related, peaking in early adolescence.

1.2.2 The clinical significance of PLEs. The importance of PLEs, for some young people, is highlighted by their association with clinical risk, including distress and self-harm in adolescents (Nishida et al., 2008) and mental health difficulties in later life (Polanczyk et al., 2010; Varghese et al., 2011; Yung et al., 2006). Data from longitudinal studies highlight the possibility that PLEs might serve as markers for an increased risk of psychotic disorder in adulthood. For example, in an Australian sample,

Welham, Isohanni, Jones, and McGrath (2009) found that self-reported auditory hallucinations at age 14 years were associated with increased risk for psychotic disorder at age 21. Specifically, for males, auditory hallucinations were associated with a five-fold increased risk of non-affective schizophreniform disorder at age 21, while for women this risk was two-fold. In a general population study from the Netherlands, Hanssen and colleagues (2005) found that 8% of those who experienced PLEs were clinically psychotic two years later.

One of the first, and most cited studies, to show an association between PLEs and the future development of disorder reported that interview-assessed psychotic symptoms were associated with a 5- to 16- fold increased risk of psychotic illness in early adulthood, depending on the strength of the initial symptoms (Poulton et al., 2000). However, more detailed analysis of this data showed that the outcomes were more varied. For example at age 11 years, 13 individuals reported two or more PLEs and of these, at 26 years, three had a schizophreniform disorder and four had an anxiety disorder. At age 11 years, 95 individuals reported one PLE and of these, at 26 years, nine had a schizophreniform disorder, 32 had an anxiety disorder and 19 had depression. Also, 90% of those reporting two or more PLEs at age 11 years had some form of social or occupational impairment at age 26 years. What these data appear to suggest is that PLEs are associated with an increased risk of mental health problems generally, and not psychosis specifically, along with an increased risk of social or occupational impairment.

That PLEs might serve as an index for the development of any mental health difficulty is consistent with a recent examination of data from four population-based studies. Kelleher and colleagues (2012b) reported that PLEs were associated with at least one diagnosable non-psychotic psychiatric disorder, and that this association increased with age, such that nearly 80% of the 14-16 year-olds who reported PLEs had at least one diagnosis in comparison with 57% of 11-13 year-olds. In fact, there are several possible explanations as to how PLEs might act as a marker for a broad array of psychopathologies. One possibility is that the same risk factors may predispose individuals to both PLEs and psychiatric illness (Breetvelt et al., 2010). Another possibility is that psychological distress caused by PLEs contributes to symptoms of other disorders (e.g., depressive cognitions). It could also be the case, however, that

PLEs do not contribute to psychopathology *per se* but emerge in vulnerable individuals who experience non-psychotic psychopathology. Therefore, the assumption that they are associated with psychosis, specifically, is not always the case. They seem to serve as a general marker of mental health difficulty and this is particularly the case for older adolescents. The nature of the relationship between PLEs and mental health and how it might manifest in a need for care are important considerations for both clinical practice and research.

Psychological understanding of childhood PLEs is limited, with research into emotional, cognitive and socio-environmental correlates only just beginning to emerge (Ames et al., 2014). One variable that has been highlighted by previous research to play a role in the onset and maintenance of psychotic symptoms, is trauma or adverse life experiences. Research with children has started to consider the relationship between sub-clinical psychotic symptoms or PLEs and environmental exposure to adversity. The current study aimed to advance previous research on childhood PLEs by investigating their association with life events with a younger sample of children than that employed to date.

Having highlighted the importance of PLEs and signalling their clinical significance, the thesis now turns to consider the relationship between these experiences and adversity.

1.3 Trauma and Adverse Life Events

The terms negative life events, adverse life events and traumatic events are used interchangeably within the research literature to refer to a range of undesirable experiences, which may also cause upset or distress. The current study focuses on both 'negative life events' of particular relevance in childhood (such as losses, separations, illness, and school/house moves) and bullying (see Section 1.5.4.2), employing the term 'adverse life events' to refer to these collectively. The current study also examines those negative life events which young people report to be upsetting, referred to as 'upsetting negative life events'.

In order to understand the association between adverse life events and PLEs in childhood, this thesis first reviews the broader literature on childhood trauma and adversity, covering a spectrum of undesirable experiences, before considering research into the link between trauma and psychotic disorder in adults, and then the association of childhood PLEs with adversity, with a systematic review of research on PLEs and adversity that are reported in childhood (rather than retrospectively). Following this review, using the variable terms employed by each reviewed study, the current study will be outlined in more detail, at which point the specific terminology above will be used.

Adverse life events including trauma are a common childhood experience worldwide, with estimates suggesting that approximately two thirds of the population might be affected at some point (Galea, Nandi, & Vlahov, 2005). According to the Centre for Disease and Prevention, childhood abuse or maltreatment includes any act of commission or omission by a parent or another caregiver that results in harm, potential harm or threat of harm to a child (Leeb, 2008). The prevalence rates of childhood abuse in the general population are marked by gross inconsistencies between official statistics and surveys based on self-report (Sideli, Mule, La Barbera, & Murray, 2012). However, the most recent systematic review of the literature relevant to the current sample, reports that in the UK, USA and New Zealand, 5-35% of children are physically abused by 18 years, 5-10% of girls and 5% of boys experience penetrative sexual abuse, and up to 10% experience psychological abuse or neglect (Gilbert et al., 2009).

In terms of exposure to a traumatic experience, more generally, Copeland Keeler, Angold, and Costello (2007) reported in a general population rural-based sample of children aged 9-13 years (N = 1,420) that more than two-thirds experienced at least one traumatic event. However, although population-based studies and national surveys provide helpful insights, they may underestimate the rates of traumatic incidents in some communities. For example, inner cities have a different socio-demographic and socioeconomic composition and are likely to have higher prevalence of trauma (Breslau et al., 1998). The area of the current study, the south London boroughs of Southwark, Croydon and Lewisham, experiences higher deprivation and higher levels of violent crime (Southwark: 27.0 per 1000; Croydon: 19.3 per 1000; Lewisham: 29.2 per 1000) than the England average (14.8 per 1000; ONS, 2011).

In terms of the relationship between trauma exposure and the development of symptoms of post-traumatic stress, in the Copeland et al. (2007) study just over 13% of those exposed developed symptoms. Therefore, although trauma exposure is a relatively common experience for some young people, full-blown DSM-V (American Psychiatric Association, 2013) post-traumatic stress disorder (PTSD) or ICD-10 (World Health Organisation, 2009) acute stress disorder (ASD) is rare. Nevertheless, exposure to a traumatic event may render a child susceptible to a broad range of other adverse outcomes (Copeland et al., 2007; see Pine & Cohen, 2002 for a review). There is growing evidence of a link between childhood trauma and one particular negative outcome: psychotic symptoms.

1.3.1 Trauma, adversity and psychotic symptoms. A growing body of evidence attests to links between psychotic symptoms, in both clinical and non-clinical populations, and traumatic life events in cross-sectional surveys (e.g., Bebbington et al., 2011; Freeman & Fowler, 2009, Janssen et al., 2003; Shevlin, Dorahy, & Adamson, 2007), cohort studies (e.g., Arsenault et al., 2011; Cutajar et al., 2010; Fisher et al., 2013) and studies on high risk populations (e.g., Lataster et al., 2006; Thompson et al., 2009) with both adults and young people. However, research of this type in children is only just beginning to emerge, and the current study aims to replicate and advance this research with children as young as eight years of age.

Empirically, there is substantial research documenting a link between negative life events and psychosis. For example, several studies have reported that psychotic episodes can be provoked by intrusive life events (e.g., arrests, convictions; Brown & Harris, 1989). A more recent study of the histories of adult outpatients with schizophrenia reported that 35% had suffered emotional abuse, 42% physical neglect and 73% emotional neglect (Holwoka et al., 2003). There are consistently elevated rates of self-reported childhood trauma (Bendall, Jackson, Hulbert, & McGorry, 2008; Morgan & Fisher, 2007) and a high prevalence of sexual abuse, in particular, in the life histories of patients with severe mental illness (Bentall, 2003). Even in general population samples, psychotic symptoms are related to childhood sexual abuse. For example, in the UK-based Adult Psychiatric Morbidity Study (N = 7298), sexual abuse before the age of 16 was strongly associated with psychosis, particularly if it involved non-consensual sexual intercourse (Bebbington et al., 2011). Such figures may not be

surprising given the high prevalence of trauma exposure among community samples generally. However, traumatic experiences do seem to have an important contribution in psychosis. For example, Bebbington et al. (2004) showed that in comparison with other psychiatric disorders, adults with psychosis had elevated levels of victimisation experiences, and childhood trauma specifically, causing the authors to suggest a causal role of these experiences.

In an attempt to synthesise the vast literature on psychosis and trauma, Morrison, Frame and Larkin (2003) reviewed and integrated the available data and suggested three possible relationships. First, the psychosis itself, either as a result of factors directly related to the disorder or as a consequence of hospitalisation or other treatment, may result in PTSD. Second, trauma may result in the future development of psychosis. Here the psychosis is seen to be a direct reaction to the traumatic event. Third, and finally, is the possibility that both psychosis and PTSD are related reactions to the traumatic event. In support of the last point, Freeman et al. (2013) reported that being physically assaulted was associated with both paranoia and PTSD, which were distinguishable from each other but predicted by the same factors (e.g., processing style).

A relationship between adverse life experiences and psychotic symptoms, in the presence or absence of disorder, is now widely accepted. What remains unknown, however, is whether trauma and negative life events actually cause psychosis or psychotic experiences (Bebbington et al., 2004; Luutonen, Tikka, Karlsson, & Slokangas, 2012; Morgan & Fisher, 2007). Indeed, this was the topic of three recent reviews that are briefly discussed (Bendall et al., 2008; Morgan & Fisher, 2007; Read, van Os, Morrison, & Ross, 2005).

The first review examined 51 studies (prior to 2004) and found that the weighted average prevalence of either sexual or physical abuse was 59% in males and 68% in females with psychotic symptoms, causing the authors to claim that ‘child abuse is a causal factor for psychosis and schizophrenia’ (p.330) and to argue that traumatic experiences should be taken into consideration when explaining the occurrence of psychotic illness (Read, et al., 2005). Morgan and Fisher (2007) subsequently reviewed these 51 studies, and when data that involved child and adolescent samples and non-

psychotic disorder were excluded, analyses showed a reduction in the previous rates, such that the prevalence of either one or other type of abuse was 50% for both genders. The third review by Bendall and colleagues (2008) highlighted a lack of evidence for a stronger effect of childhood trauma on schizophrenic psychosis than on affective psychosis.

Each of the reviews commented on methodological problems (e.g., inconsistent use of definitions and instruments) that prevented unequivocal conclusions about the associations between childhood trauma and psychosis being made. The principal limitation, and one that is the most relevant to the current study, is the use of retrospective reports that prevent any conclusions about direct cause and effect to be made. Despite research supporting the reliability of patients' memories (e.g., Fisher et al., 2011), retrospective assessment cannot exclude recall bias. Thus, an alternative, and arguably more robust, approach is to examine the association between childhood adversity and psychotic symptoms in samples of young people who have had little or no contact with mental health services. This offers the opportunity to study the relationship between these experiences when both can be assessed relatively close in time and reduces reliance on participant memory and ability to recall. Such a strategy has been adopted in more recent research in this area and the current study aims to advance this research by looking at the relationship between PLEs and adversity in a sample of clinically referred young people. However, before considering studies that have investigated PLEs and adversity in childhood, the thesis will discuss several theoretical accounts that address the question of how adverse experiences might result in psychotic symptoms in adults. Following this, a systematic review of studies on PLEs and adversity in young people is presented.

1.4 Theoretical Accounts of PLEs that take into account Adverse Life Events

Dimensional models have dominated this literature and are based on the premise that PLEs fall on a continuum from normal experiences to clinically relevant symptoms of psychosis. These models can be distinguished in terms of their conceptualisation of PLEs either as pathological in and of themselves or, alternatively, as indicators of vulnerability. The most popular of these models is introduced below and conceptualises PLEs as markers of increased risk for future psychosis (Poulton et al., 2000; van Os et al., 2009).

1.4.1 A quasi-dimensional model of PLEs and adverse life events. van Os et al.'s (2009) proneness-persistence-impairment model of psychotic disorder proposes that genetic background factors impact on a broadly distributed and transitory population expression of psychosis during development. Poor prognosis and clinical need are predicted by environmental exposures that interact with this genetic risk. Therefore, depending on the level of environmental risk that a person is additionally exposed to, the transitory developmental expression of psychosis may become abnormally persistent, with this persistence resulting in impairment and subsequent disorder.

In support of this model, it has been shown that traumatic events influence the persistence of psychotic experiences. For example, in a study described previously, Mackie and colleagues (2011) reported that bullying increased the likelihood of persistent PLEs and that these in turn were associated with elevated levels of depression and anxiety (i.e. a possible index of impairment). Wigman et al. (2012) reported similar findings for the persistent trajectory in their study; it was strongly associated with childhood trauma, cannabis use, developmental difficulties, ethnic minority status and distress. Young people in this category were also significantly more likely to have used mental health care by the end of the 6-year follow-up period.

An undoubted strength of the proneness-persistence-impairment model is that although it suggests that PLEs are important indicants of the transition to disorder, it also emphasises that PLEs are transitory for the majority (Bartels-Velthuis et al., 2012; Hanssen et al., 2005). The model proposes that observation of the development of PLEs over time and the occurrence of environmental exposures might be useful in distinguishing true underlying vulnerability to psychosis from more transient experiences (Yung et al., 2009).

A major limitation of the model is that it was primarily derived on the basis of research with adults. The same risks and developmental trajectories might not apply to children. Also, the influence of developmental factors on the expression and outcomes of PLEs are not considered. The application of this model to young people is further restricted by emerging evidence that suggests PLEs are predictive of a range of psychopathologies, and not just psychosis uniquely, as discussed previously.

The model also fails to consider the *process* by which adverse life events result in persistent PLEs and disorder. Cognitive models of the positive symptoms of psychosis do specify cognitive, social and emotional processes that contribute to the development of symptoms, and in this way provide more information about potential pathways by which adverse life events may lead to the onset or persistence of PLEs, highlighting candidate targets for preventative intervention. These models are detailed below.

1.4.2 Cognitive models of PLEs and adverse life events. Garety and colleagues' cognitive model of the positive symptoms of psychosis (Garety, Bebbington, Fowler, Freeman, & Kuipers, 2007; Garety, Kuipers, Fowler, Freeman, & Bebbington, 2001) proposes that a biopsychosocial vulnerability is triggered by negative life events, trauma, adverse environments, illicit drug use or isolation. Activation of this vulnerability, results in *emotional changes*, including anxiety, depression, anger, mania; and *cognitive aberrations*, including changes in perception, attention, reasoning or judgement, and negative appraisals of the experience. In combination, these affective and cognitive changes result in positive symptoms of psychosis or PLEs. Therefore, trauma and adverse life events are important in triggering and maintaining PLEs via their impact on affect and cognition.

Trauma and life events are hypothesised to act developmentally, impacting the formation of schemas and, also, as proximal triggers resulting in emotional changes that shape interpretations of anomalous experiences. The model proposes that one pathway to PLEs emerges directly from stressful events and an anomalous experience, while another is mediated by emotional changes exclusively. Anomalous experiences are associated with disturbances to information processing which result in dysfunctional responses and appraisals of the experience as external, leading to abnormal beliefs and hallucinations, and eventually to the person becoming symptomatic. The model highlights that it is the appraisal of these experiences that results in distress and disability.

A strength of this model is that it offers an explanation of the route by which triggering life events might result in symptoms; via cognitive and affective processes. That Garety et al.'s (2001; 2007) model proposes two different trajectories to PLEs is a further advantage; however, the nature of these trajectories in children is not clearly

understood and the current model might not accurately account for all possibilities. Thus, the application of the model to the relationship between child and adolescent PLEs and adversity is limited given that the research that informed its development and which has subsequently validated it has, predominantly, involved adults.

An alternative cognitive model, offered by Morrison (2001) also highlights the importance of cognitive processes in the formation and maintenance of psychotic symptoms. Here symptoms are conceptualised as intrusions into awareness (e.g., hallucinations) or the culturally unacceptable interpretations of these intrusions (e.g., delusions). It is this interpretation that yields associated distress and disability. Misinterpretations are described as the combination of previous experience, beliefs and knowledge and are maintained by safety behaviours, processing, faulty self and social knowledge, mood and physiology.

It is suggested that traumatic experiences contribute to the development of faulty self and social knowledge and the culturally unacceptable nature of the interpretations of intrusions or PLEs; thus, playing a pivotal role in subsequent symptom development. Morrison (2001) has advised that unacceptable interpretations might develop as functional survival strategies in response to trauma. This is supported by evidence that positive beliefs about PLEs are associated with their occurrence (Morrison, Wells, & Nothard, 2002). Morrison et al. (2003) address the overlap between PTSD and psychosis by combining the previous work of Morrison (2001) with that of Ehlers and Clark (2000) and suggest that if an individual relates their experiences to a traumatic event a diagnosis of PTSD is more likely.

The strength of Morrison's (2001) model is its emphasis on the socio-cultural context influencing the unacceptable interpretation of experiences, while also acknowledging that faulty self and other knowledge is a likely consequence of life events. However, this model has also been developed from research with adults and it can only be cautiously applied to our understanding of the PLE-adversity relationship in children.

The cognitive models outlined highlight the importance of cognitive and affective routes from adverse life events to PLEs in adults, which could form important intervention targets, should the same PLE-adversity relationships exist in childhood.

Having reviewed and considered important research and theory with respect to the PLE-adversity relationship in adults, the thesis therefore now turns to discuss this relationship in children and young people. A systematic review of relevant literature is outlined below, followed by an introduction to the current work and its aims.

1.5 Adverse Life Events and PLEs in Childhood: A Systematic Review

Given a recent burgeoning of research into the PLE-adversity link in children and young people, a systematic review of all published studies that have included a measure of psychotic symptoms and adverse life events was conducted in an attempt to provide a cohesive overview of relevant research conducted to date. The aim of this review was to collate all studies that have explored the relationship between PLEs and adverse life experiences in children and young people. The MEDLINE, EMBASE, PsychINFO electronic databases were searched from 1946, 1946 and 1947, respectively, to July 2013. The following search terms were used in the format: [(young people OR adolescen OR teenage OR child) AND (psychotic OR psychosis OR paranoia OR delusion OR hallucination OR grandiose OR positive symptom OR negative symptom OR PLIKS) AND (trauma OR negative life event OR abuse OR neglect OR incest OR postraumatic stress disorder OR bully OR victim OR parental loss)]. References within papers were also searched to identify other possible studies.

1.5.1 Inclusion criteria for the systematic review. Published papers that reported on: (a) psychotic symptoms (including both questionnaire-based and interview assessment methods and reports by self and others) in children and adolescents less than or equal to 18 years of age; and (b) traumatic and/or adverse life events (including both questionnaire-based and interview assessment methods and reports by self and others) in children and adolescents less than or equal to 18 years of age; and (c) that were published in English were included.

1.5.2 Exclusion criteria for the systematic review. Papers were excluded for the following reasons: (a) did not report an association between psychotic symptoms and trauma and/or adverse life events or data from which this association could be calculated; (b) did not report associations between psychotic symptoms and trauma and/or adverse life events for individuals aged less than or equal to 18 years or allow calculation of this association for this age group separately; (c) reported on cases with diagnosed psychotic illness; (d) reported on cases with diagnosed prodromal illness; (e) comprised case reports, letters, reviews, meta-analyses or book chapters; and (f) reported psychosis symptoms that were sleep related, drug-induced or organic in origin only.

1.5.3 Study selection and data extraction. Following initial searches all titles and abstracts were examined and the relevance and appropriateness of the studies were assessed in relation to the main question under review. Full texts of potentially relevant papers were obtained. Where necessary, authors were contacted for further information. The following data was extracted from each of the papers collected: (a) the study design; (b) sample size; (c) the age range of participants; (d) instrument(s) used to assess psychotic symptoms; (e) instrument(s) used to assess traumatic and/or negative life events; (f) the method of assessment of psychotic symptoms; (g) the method of assessment of traumatic and/or negative life events; and (h) the statistical association between psychotic symptoms and trauma and/or negative life events. The data were extracted and judged independently by the author and an independent reviewer. This review of the literature yielded 841 papers. Of these, 16 (1.9%) had data relevant to the review and are presented in Table 1.1. Figure 1.1 provides an overview of study selection.

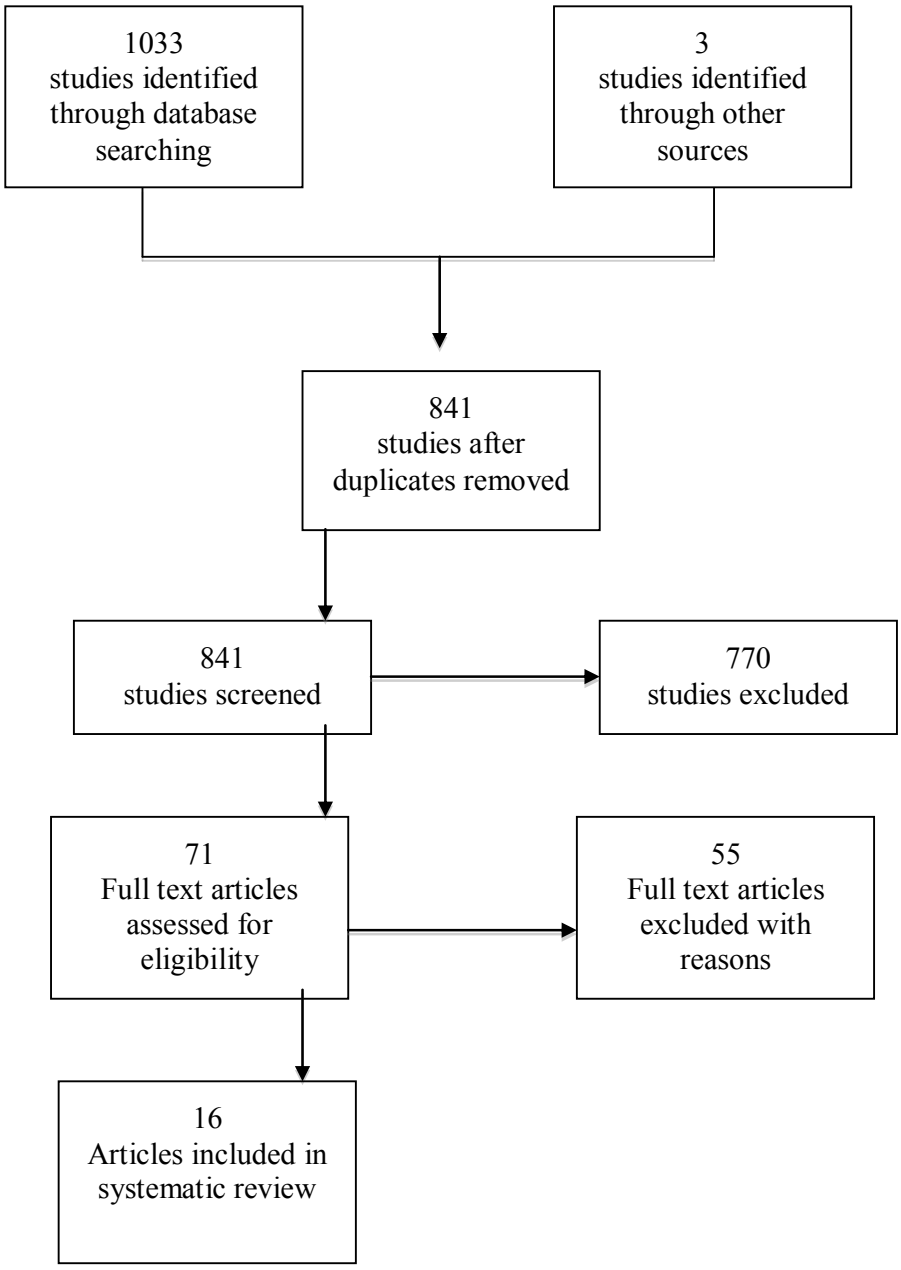

Figure 1.1 Flow diagram of studies selected for systematic review

Table 1.1

Overview of studies reporting psychotic symptoms and negative life events with children and young people aged less than 18 years

Study	Study Design	Instruments measuring psychosis outcome	Instruments measuring trauma outcome	Participants	Mean Age (range) in years	Findings
Sansonnet-Hayden et al. (1987)	Cross-sectional Inpatient adolescent psychiatric unit	*Self-reported PLEs:* -The schizophrenia module of the DISC (Shaffer et al., 2000)	*Self-reported sexual abuse:* Assessed via interview using standardised guidelines (Pomeroy et al. 1982)	Consecutive admissions to a psychiatric inpatient unit in British Columbia, Canada and were assessed within two weeks of hospitalisation (*N* = 54)	14.6 (13-17)	1. Patients with a history of sexual abuse reported more PLEs and more hallucinations in particular.
Mundy et al. (1990)	Cross-sectional	*Self-reported PLEs:* -Psychotic symptom section of the DIS (Robins et al., 1981)	*Self-reported neglect*: - Left alone often, basic needs for food or clothing not attended to *Self-reported physical abuse:* - Distinction made between extra-familial and intra-familial abuse *Self-reported sexual abuse:* -Distinction made between extra-familial and intra-familial abuse *Self-reported homeless episode:* - Length of the homeless period (All interview assessed)	Sample of homeless adolescents in Los Angeles, United States (*N* = 96)	16.1 (12-17)	1. PLEs were significantly associated with intra-familial physical abuse 2. PLEs were significantly associated with extra-familial sexual abuse 3. There was not a significant association between length of homeless episode and PLEs 4. PLEs were also associated with affective disturbance and substance abuse

Lataster et al. (2006)	Cross-sectional General population based study	*Self-reported PLEs*: - 'Have you ever had messages sent just to you through the television or radio? - 'Have you ever thought that people are following you or spying on you? - 'Have you ever heard voices other people cannot hear?' Items adapted from the DISC (Shaffer et al., 2000)	*Self-reported bullying*: - How many times have you been the victim of bullying in the past year? S*elf-reported sexual trauma*: -'Have you ever had an unpleasant sexual experience?' (All questionnaire assessed)	Young people who are examined regularly by the Youth Health Care divisions of the Municipal Health Services in the Netherlands (*N*= 1290)	14 (12.4-16.8)	1. Bullying was significantly associated with PLEs 2. Sexual trauma was significantly associated with PLEs 3. A dose-response relationship detected between frequency of victimisation and PLEs
De Loore et al. (2007)	Longitudinal (2 year follow-up) General population based study	*Self-reported PLEs*: -Same as Lataster et al. (2006)	Same as Lataster et al. (2006) *Self-Reported Negative Life Events*: - Did you experience important and unpleasant events in the past year & How much did this influence your daily life (Questionnaire)	Same as Lataster et al. (2006) (*N* = 1129)	Time 1: 13.7 (12-17) Time 2: 15.1 (14-18)	1. Sexual trauma increased the risk for PLEs two years later 2. Life events contributed to risk for psychotic symptoms over time and psychotic experiences were significantly associated with new life events 3. There was no significant association between PLEs and bullying when controlling for confounding variables
Colins et al. (2009)	Cross-sectional Prison-based sample	*Self-reported PLEs*: -The schizophrenia module of the DISC-IV (Shaffer et al., 2000);	*Self-reported trauma:* Short form of the CTQ (Bernstein et al., 2003) *Self-reported life threatening events:*	Recently detained male minors from three Youth Detention Centres in Belgium (*N* = 245)	15.99 (12-18)	1. PLEs were significantly associated with emotional abuse variables 2. Trauma variables were better predictors of the number of PLES than substance-related

			PTSD module of the DISC-IV (Shaffer et al., 2000)			variables
McAloney et al. (2009)	Cross-sectional study in the context of a longitudinal study General population school-based sample	*Self-reported PLEs:* -The Psychosis Screening Questionnaire (Bebbington & Nayani, 1995)	*Self-reported exposure to community violence:* 1. Knowledge: - 'Anyone in the family been robbed or attacked?' - 'other acquaintance been beaten up or attacked?' - 'family member killed or murdered?' - close friend killed or murdered?' 2. Witnessing: - 'Seen someone beaten up?' - Seen someone shot?' - 'Witnessed a violent crime?' 3. Direct victimisation: - 'Been a victim of a violent crime?' - 'Been a victim of a non-violent crime?' (Questionnaire)	Belfast Youth Development Study in Northern Ireland (N = 3828)	(15-16)	1. There was a significant relationship between PLEs and knowledge of community violence, witnessing community violence and direct victimization. 2. The relationship was strongest for knowledge of a community violence
Harley et al. (2010) *Same sample as Kelleher et al. (2008)*	Cross-sectional General population School-based sample	*Self-reported and parental-reported PLEs:* -K-SADS psychosis module	*Self-reported and parental-reported physical abuse*: K-SADS PTSD module *Self-reported and parental-reported sexual abuse:* K-SADS PTSD module *Self-reported and parental-reported domestic violence:* K-SADS PTSD module	Irish adolescents involved in the Challenging Times Study and a parent (N = 211)	(12-15)	1. Both cannabis use and childhood trauma were significantly associated with risk of PLEs 2. The presence of both childhood trauma and early cannabis use significantly increased the risk for PLEs beyond the risk posed by either factor alone, indicating a greater than additive interaction

						between trauma and cannabis
Bartels-Velthuis et al. (2012)	Case-control general population sample of young people with and without auditory vocal hallucinations (AVH) Follow-up study where participants had been assessed 5 years previously	*Self-reported PLES:* Auditory hallucinations: AVHRS (Interview) - Delusional Ideation: 'Some people believe in mind reading or being psychic. Have other people ever read your mind?' - Have you ever had messages sent just to you through television or radio?' - ' Have you ever thought that people are following you or spying on you?' Used by Poulton et al. (2000) Four developmental trajectories of PLEs: - Persistent - Incident - Remitted - Absent	*Traumatic events*: - sexual approach/abuse - Internet blackmailing/threatening - Undeserved punishment Witness serious accidents - Witness robberies - Witness threats (Interview questionnaire) *Stressful Events*: Questionnaire employed by TRAILS	Survey of children in the Netherlands (N = 337)	13.1 years (12-14.6)	1. Both traumatic and stressful life events were associated with incident and persistent AVHs, as well as with greater AVH severity and delusional ideation at follow-up. 2. The combination of AVH and delusional ideation showed a stronger correlation with traumatic and stressful life events than either PLE independently.
Wigman et al. (2012)	Prospective Cohort Study General Population	*Self-reported PLEs:* -Assessed with the CAPE (Konings et al., 2006); 20 items Four developmental trajectories of PLEs: - Low - Increasing - Decreasing - Persistent	*Self-reported life events before age 11 years:* -Moving - Hospitalisation (of self or family) - Sickness or death (of self, family or friends) - Parental divorce - Count of the number of life events experienced from 0-5 and 6-11 years	Dutch TRAILS study (N = 1816)	16.3	1. Trauma was significantly associated with scores on the CAPE and with all the developmental trajectories of PLEs.

			Parental-reported life events before age 11 years: - Parental divorce - Young person being at least 3 months away from home *Self-reported trauma between 11 and 16 years:* - Victim of violence - Gossip - Bullying or sexual harassment - Count of the number of negative life events experienced in the past two years *Parental reported stressfulness of young person's life:* - Likert rating scale *Items were combined to yield a single trauma measure			
Campbell & Morrison (2007)	Cross-sectional General population school based sample	*Self-reported PLEs:* - Paranoia Scale (Fenigstein & Vanable, 1992); 20 items - LSHS-R Auditory subscale; 4 items (Questionnaire)	*Self-reported bullying:* - Victimisation subscale of the BVQ (Olweus, 1996); 29 items One item used to identify victimisation: 'how often have you been bullied at school this term?	Adolescents from a secondary school in Manchester, England (N = 373)	14.8 (14-16)	1. The frequency of being bullied was significantly correlated with scores on the LSHS-R and Paranoia Scale
Kelleher et al. (2008)	Cross-sectional Cohort Study General Population School-based	*Self-reported and parental-reported PLEs:* See Harley et al. (2010)	*Self-reported and parental-reported physical abuse*: K-SADS PTSD module *Self-reported and parental-reported sexual abuse:* K-SADS PTSD module	Irish adolescents involved in the Challenging Times Study in Dublin and a parent (N = 211)	(12-15)	1. PLEs were associated with physical abuse in childhood, exposure to domestic violence and being identified as a bully/victim 2. There was no significant

			Self-reported and parental reported domestic violence: K-SADS PTSD module *Self-reported and parental reported bullying:* K-SADS Social Relations module			association between PLEs and childhood sexual abuse, but the number reporting this abuse was low
Nishida et al. (2008)	Cross-sectional General population school-based sample	*Self-reported PLEs:* - DISC (Costello et al., 1982); 4 items used by Poulton et al. (2000); see Lataster et al. (2006) (Questionnaire)	*Self-reported bullying:* - Being bullied (within 1 year) *Self-reported exposure to violence:* - Violence from adults in the home (within 1 month) (Questionnaire)	Japanese adolescents involved in the ESPAT study (*N* = 4849)	13.3 (12-15)	1. PLEs were significantly more likely among those that had experienced violence from adults in the home and those that had both bullied others and been personally bullied in the past year
Mackie et al. (2011)	Prospective Longitudinal Cohort Study General population school-based sample	*Self-reported PLEs:* -Psychotic-like experiences Questionnaire (Laurens et al., 2007) Assessed at 4 time points, each 6 months apart. 3 developmental trajectories of PLEs: 1. Persistent 2. Increasing 3. Low	*Self-reported bullying:* 4 items from the BVQ (Olweus, 1996): - Overt bullying (e.g., kicked hit, pushed or shoved) - Relational bullying (e.g., excluded on purpose or called mean names) (Questionnaire)	Adolescents from 12 secondary schools in London, England (*N* = 409)	At Time 1: 14.7	1. Adolescents on the persistent trajectory reported frequent victimisation (and consistent elevated scores in depression and anxiety)
Schreier et al. (2009)	Prospective Longitudinal Cohort Study General Population	*Self-reported PLEs:* PLIKSi - Hallucinations (visual and auditory) - Delusions (spied on, persecution, thoughts being read, reference, control,	*Self-reported peer victimisation:* -The Bullying and Friendship Interview Schedule *Parent and teacher-reported peer victimisation:*	ALSPAC Study, England (*N* = 6437)	12.9 years at assessment of PLEs 8 and 10 years at assessment	1. The risk of PLEs increased by two-fold among victims of bullying at ages 8 and/or 10 years 2. Findings were replicated using mother and teacher reports of victimisation

		grandiose ability, thought broadcasting, insertion and withdrawal)	- The Strengths and difficulties Questionnaire (Goodman, 1997)		of bullying	3. Stronger associations with PLEs were found for chronic and severe bullying
Fisher et al. (2013)	Prospective Longitudinal Cohort Study General population	*Self-reported PLEs:* -Same as Schreier et al. (2009)	*Maternal-reported Domestic Violence:* - 'Your husband/partner was physically cruel to you?' - 'Your husband/partner was emotionally cruel to you?' *Maternal-reported Maternal Hitting:* - 'When you are home with your child how often do you slap him?' *Maternal-reported Hostility:* - 'Mum feels that whining makes her want to hit child' - 'mum often irritated by child' - 'mum has battles of will with child' - 'child gets on mum's nerves' ** Hostility and hitting combined to create a 'harsh parenting' index. *Self-reported Bullying:* Same as Schreier et al. (2009)	UK Avon Longitudinal Study of Parents and Children (N = 6629)	12.9 years at assessment of PLEs 8.5 years at assessment of bullying 2 or 3.5 and 7 at maternal reports	1. There were significant associations between harsh parenting, bullying, exposure to domestic violence and PLEs 2. The weak effect of harsh parenting in childhood on PLEs in early adolescence was entirely accounted for by depressive symptoms, level of anxiety, an external LOC, and low self-esteem. 3. These pathways were also involved in PLEs following bullying exposure and domestic violence, but accounted for smaller amounts of the overall effects
Arsenault et al. (2011)	Prospective Longitudinal Cohort Study General population	*Self-reported PLEs:* Interview assessed: - 'Have you believed that you were sent special messages through TV or radio?'	*Maternal-reported maltreatment by an adult:* Interview assessed: -'When X was a toddler, do you remember any time when he/she was disciplined	UK Environment-Risk Longitudinal Twin Study (N = 2127)	12 at assessment of PLEs and bullying Maternal	1. All types of traumas were associated with PLEs at age 12 years. 2. Traumas involving an intention to harm were more strongly associated with PLEs

- 'Have you ever felt like you wee under the control of some special power?' -have other people ever read your thoughts?' - Have you ever thought that you were being followed or spied on? -have you ever known what another person was thinking, even though that person was not speaking, like read their mind?' 'Have you ever heard voices that other people cannot hear?' Have you ever seen someone or something that other people could not see?	severely enough that he/she may have been hurt? -'Did you worry that you or someone else may have harmed or hurt X during those years?' *Maternal-reported bullying by peers:* - Life History Calendar *Self-reported bullying by peers:* - Interview assessed *Maternal-reported accidents:* - Interview assessed: Life History Calendar ** Maltreatment + bullying were combined to create an intention to harm variable		reports at ages 7, 10 and 12	than those without this intention. 3. Findings were similar for traumas from early and middle childhood. 4. The cumulative experience of 2 types of trauma involving an intention to harm was more strongly associated with PLEs than the experience of each trauma independently.

Note. Abbreviations: ALSPAC, Avon Longitudinal Study of Parents and children; *AVHRS*, Auditory Vocal Hallucinations Rating Scale; BAPS, Beliefs about paranoia scale; BVQ, Bully/Victim Questionnaire; BFIS, Bullying and Friendship Interview Schedule (BFIS); CAARMS, Comprehensive Assessment of At-Risk Mental State; CAPE, Community Assessment of Psychic Experiences; DIS, Diagnostic Interview Schedule; DISC-IV, Diagnostic Interview Schedule for Children; ESPAT, Epidemiological Study of Psychopathology of Adolescents in Tsu; ETI, Early Trauma Inventory; GTQ, General Trauma Questionnaire; K-SADS, Schedule for Affective Disorders and Schizophrenia for School-Age Children, Present and Lifetime Versions; LSHS-R, Revised Launay-Slade Hallucinations Scale- auditory subscale; M-CIDI, Munich Composite International Diagnostic Interview; PLIKSi, Psychotic-like Symptoms interview; PRCI; Posttraumatic Cognitions Inventory; SCL-90-R; Symptom Checklist-90-Revised; SIPS/SOPS, Structured Interview for Prodromal Syndrome/Scale of Prodromal Symptoms; TRAILS, TRacking Adolescents' Individual Life Survey

1.5.4 Review of studies on PLEs and adversity. The selected studies document self-reported PLEs in young people that were 18 years of age or younger; the youngest age at which these were assessed was 12 years (Arsenault et al., 2011; Kelleher et al., 2008). As the focus of the review was on sub-clinical psychotic symptoms, the studied samples did not include those with clinical diagnoses of psychosis or those in the prodrome and with the exception of one study (where participants were in-patients at a psychiatric unit), were non-clinical, general population and often school-based. The studies reported on a range of adverse life events including bullying (9 studies), physical abuse (2 studies), sexual abuse (5 studies), harsh parenting (1 study), neglect (2 studies), domestic violence exposure (1 study), violence in the home (1 study), and community violence exposure (1 study). Across the studies, adversity was assessed via self-report and parental report, and the youngest age at which it was measured was at eight months (via maternal report; Fisher et al., 2013). Given that bullying was the most investigated adverse life event, studies that presented data for it independent of other life events are discussed separately from studies that pooled information on bullying with other life events.

1.5.4.1 PLEs and adverse life events (excluding bullying). The first studies to explore the PLE-adverse life event link were cross-sectional. For example, Sansonnet-Hayden, Haley, Marriage and Fine (1987; N = 54; mean age = 14.6 years) reported that in a sample of adolescent inpatients, those with a sexual abuse history reported significantly more PLEs, and more hallucinations, specifically, than those without such a history. Mundy, Robertson, Robertson and Greenblatt (1990) investigated psychotic symptoms in a sample of homeless adolescents (N = 96; mean age = 16.1 years) and found that PLEs were significantly correlated with intra-familial physical abuse and extra-familial sexual abuse, but not with the length of the homeless episode. A third cross-sectional general-population based study in the Netherlands (N = 1290; mean age = 14 years) reported that sub-clinical psychotic experiences were strongly and independently associated with both bullying and sexual trauma (Lataster et al., 2006). A dose-response relationship was also evident for victimising experiences. A two-year follow-up of this sample (n = 1129; mean age 15.1 years), showed that sexual trauma, only, was found to increase the risk for PLEs two years later (De Loore et al., 2007).

Life events were found to contribute to the risk for PLEs over time and PLEs were significantly associated with new life events.

In the first of two more recent cross-sectional studies, Colins, Vermeiren and Vreugdenhil (2009) reported that PLEs were significantly associated with emotional abuse variables in detained minors (N = 245; mean age = 15.99 years). Paranoid-related symptoms were found to be important in driving this relationship. Trauma-related variables were better predictors than substance-related variables of the number of PLEs reported. In the second study, McAloney, McCrystal, Percy and McCartan (2009) found with data from the Belfast Youth Development Study (N = 3828; age range = 15-16 years) that endorsing one PLE was twice as likely among adolescents with knowledge of community violence and over one and a half times more likely among adolescents who had witnessed violence or been directly victimised. With a school-based sample, Harley et al. (2010; N =211; age range 12-15 years) showed that an increased risk of PLEs was significantly associated with cannabis use and childhood trauma, with the presence of both risk factors significantly increasing the risk for PLEs beyond that posed by each individually.

Two studies explored the developmental trajectories of PLEs across time and the impact of life events on these. First, Bartels-Velthuis and colleagues (2012) examined auditory hallucination (AH) trajectories and found evidence for persistent, incident, remitted and absent (referred to as referent group) AH pathways using follow-up data (N = 337; mean age = 13.1 years) of young people first assessed for AH aged 7-8 years. Social adversity was associated with incident and persistent AH, as well as with greater AH severity and delusional ideation. The combination of AH and delusions displayed a stronger association with social adversity compared with either of these experiences alone. The authors suggest that exposure to childhood adversity increases the intrusiveness of hallucinations, which in turn may increase the risk of secondary delusional ideation. Wigman et al. (2012) also examined the developmental pattern of PLEs, more generally, with data from the prospective cohort TRacking Adolescents' Individual Lives Survey (TRAILS; N = 1816; mean age = 16.3 years) and identified low, decreasing, increasing and persistent PLE trajectories. Trauma was significantly associated with scores on the PLE measure and with all developmental trajectories.

It is evident that exposure to a range of traumatic and adverse life events is associated with increased risk of PLEs in children and adolescents. A dose-response relationship was evident in one study (e.g., Lataster et al., 2006) and it seems that more severe experiences (e.g., sexual abuse) are likely to influence the persistence and severity of PLEs (De Loore et al., 2007). Traumatic experiences have been found to be better predictors of PLEs than substance-related variables (Colins et al., 2009) and the combination of cannabis use and PLEs has been found to increase the risk of PLEs beyond either factor individually (Harley et al., 2010). A history of sexual abuse was associated with the experience of hallucinations, primarily (Sansonnet-Hayden et al., 1987). Importantly, it is not only exposure to an adverse event that is associated with PLEs, but knowledge of such events has also been shown to increase the risk of PLEs to a greater extent than witnessing or direct involvement in an event (McAloney et al., 2009).

1.5.4.2 PLEs and bullying. Bullying is a particular type of negative life event that is often, but not necessarily always, upsetting. The thesis first considers definitions of bullying used both within the wider literature and current study, before it turns to consider the research studies, identified by the systematic review, which examined the PLE-bullying association.

Bullying is a commonly recognised problem that is estimated to affect almost half (46%) of children and young people at school at some point in their life (Chamberlain,et al., 2010). Conceptual and methodological issues in the measurement of bullying behaviour have been noted in the research literature (e.g., Vaillancourt et al., 2008). Despite this, one widely accepted definition of bullying, provided by Olweus (1993), is as follows: “a student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students (p.9)”. Here a negative action refers to when a person intentionally inflicts, or attempts to inflict, injury or discomfort on another. Olweus also clarifies that bullying involves an imbalance of power so that a young person who is exposed to bullying struggles to defend himself or herself.

Olewus’s definition of bullying forms the basis for the bullying construct measured in the current study with the ‘victisimisation at school’ items from the Middle

Years Developmental Instrument (MDI; Schonert-Reichl et al., 2012). In the MDI, a self-report measure, young people were asked how often, in this school year, if at all, they have been bullied in the following ways: physical, verbal, social, cyber or other. Examples are provided for each bullying sub-type (see Section 2.3.5), along with an overall definition of bullying:

> 'There are lots of different ways to bully someone, but a bully has some advantage (stronger, more popular or something else), wants to hurt the other person (it's not accidental), and does so repeatedly and unfairly. Sometimes a group of students will bully another student.'

Thus, the current study assesses the experience of five distinct types of bullying.

The studies outlined in Table 1.1 used a variety of measures and formats (e.g., self-report or interview-based) to assess different types of bullying behaviour. This variability reflects the general state of the research literature on bullying. As the PLE-bullying link is the focus of the current work, the below review of studies simply states the findings with respect to this relationship, generally, and does not detail the specific type(s) of bullying investigated. More detailed information on the measures used to assess bullying, and by default the nature of bullying assessed, in each of these studies is presented in Table 1.1

In keeping with Olewus's definition of bullying in the context of peer relations, initial research into the PLE-bullying relationship involved school-based samples. For example, Campbell and Morrison (2007; $N = 373$; 14-16 year-olds) showed that the frequency of bullying was significantly associated with self-reported auditory hallucinations and scores on a measure of paranoia. Kelleher et al. (2008), using data from the same sample as Harley et al. (2010), found that adolescents who reported PLEs were more likely to have been both a victim and a perpetrator of bullying; these young people ($N = 211$ 12-15 year-olds) were also more likely to have been physically abused during childhood and to have been exposed to domestic violence. Nishida et al. (2008) replicated the findings with respect to increased likelihood of PLEs for those with bully/victim status with a Japanese sample ($N = 4849$; 12-15 year-olds) and also

showed that PLEs were more likely for those that had experienced violence in the home from adults.

The PLE-bullying relationship has been further explored in several prospective longitudinal cohorts. In a similar vein to the work on PLE trajectories described above, Mackie, Castellanos-Ryan and Conrod (2011; *N* = 409; mean age = 14.7 years at Time 1) identified three developmental subgroups of PLEs: persistent, increasing and low; and found that bullying significantly increased the likelihood of persistent PLEs. With data from the Avon and Longitudinal Study of Parents and Children (ALSPAC), Schreier et al. (2009; *N* = 6437) showed that the risk of psychotic symptoms increased two-fold among victims of bullying at ages 8 and/or 10 years. These associations remained significant with parent and teacher reports of bullying and there was a dose response relationship with stronger associations for severe (involving physical and relational bullying) and chronic bullying. In a later study with some of the same data from the ALSPAC cohort, Fisher et al. (2013; *N* = 6629; mean age = 12.9 years at assessment of PLEs) showed that specific cognitive and affective difficulties accounted for the significant relationships between negative life events and PLEs. Specifically, a weak association between harsh parenting and PLEs was fully mediated by anxiety, depressive symptoms, external locus of control (LOC: the extent to which individuals believe that they can control the events that affect them) and low self-esteem. Bullying victimisation and exposure to domestic violence had their associations with psychotic symptoms partially mediated by anxiety, depression, LOC and self-esteem.

Arsenault et al. (2011; *N* = 2127) differentiated between types of trauma based on the intention to harm (maltreatment and bullying) and also examined the effect of trauma experienced at different points in childhood with data from the E-Risk Longitudinal Twin Study. Results showed that all types of trauma were associated with a higher risk of psychotic symptoms at age 12. However, associations were stronger for traumas involving an intention to harm, whether adults or peers perpetrated these acts was not important. A cumulative effect of the experience of two types of trauma involving an intention to harm was also detected.

Overall, the presented studies highlight the importance of bullying frequency (Campbell & Morrison, 2007), persistence (Nishida et al., 2008), and bully/victim

status (Kelleher et al., 2008; Nishida et al.) in the incidence and persistence of PLEs (Mackie et al., 2011). The inclusion of maltreatment by Arsenault et al. (2011) signals the potentially underlying variable of an intention to harm, that might be driving some of the effect in the PLE-bullying relationship. Importantly, most recent research has begun to examine the role of psychological and affective mediators of the PLE-adverse life event relationship (Fisher et al., 2013).

In sum, recently researchers have started to explore the relationship between PLEs and adverse life events in children and adolescents. The data clearly suggest that the experience of a range of adverse life experiences might increase the risk for PLEs in young people. The dose-response relationship reported in these studies is often taken as evidence for causality. The current study aimed to replicate the association between PLEs and adverse life experiences and expand the research literature by employing a sample of clinically-referred 8 to 14 year olds. In addition to this, parents also reported on their child's experiences permitting analysis of the PLE-negative life event association based on parental report, and also investigation of the correspondence between child and parent reports of PLEs and negative life events. An additional aim of the current work was to explore the similarity in the content of PLEs and adverse life events of children, with a view to elucidating potential causal pathways and intervention targets. Research of this nature has been done with adults and prodromal samples, and is discussed below. This is the first study to examine content associations in a clinically-referred sample of children reporting PLEs.

1.6 Content associations between PLEs and Adverse Life Events

The observations of psychologists, and those using CBT, in particular, were the crucial impetus for work into the content of PLEs when it became apparent that many symptoms of psychosis can be meaningfully related to a past personally significant experience (Fowler et al., 1998). The notion that psychosis is a direct consequence of traumatic experience and subsequent PTSD has a long history. When psychotic symptoms seem very obviously related to past traumatic events the term 'reactive psychosis' is often used (though its occurrence is rare), indicating a different causal process to that involved in other types of psychoses. Conversely, when trauma is identified in individuals with psychosis, hallucinations are often classified as memories

of the traumatic events, akin to the flashbacks typically considered indicative of PTSD rather than psychosis.

The evidence for the association between trauma and psychosis is strongest for the occurrence of hallucinations (Read et al., 2005) and hallucinations with content related to trauma are found in psychosis. For example, Hardy et al. (2005) conducted a phenomenological investigation of the relationship between the traumatic experiences and hallucinations of patients (n = 40) who were receiving treatment for relapsing psychosis. Results showed that 12.5% of the patients had direct content associations between their psychotic and traumatic experiences, while 57.5% had hallucinations with indirect or thematic associations. Although associations between psychotic symptoms and previous trauma were not evident for all participants, indirect links were common, suggesting the need for careful exploration of how these experiences might be related for some.

The findings of Hardy et al. (2005) fit with research showing that the failure to integrate traumatic events into memory at the time of their occurrence can result in the persistence of disaggregated stimuli which are compartmentalised and independent of context and can emerge later in life (Moskowitz, Read, Farrelly, Rudegair & Williams, 2009). The current conceptualisation of the trauma-hallucination relationship is that *some* intrusive, flashback memories of traumatic experiences occur with awareness that it is an internal event relating to the past (i.e. a memory of a trauma), while other such experiences seem to occur without this awareness and are experienced as external events in the present (known as 'faulty source monitoring'). This strong trauma-hallucination link then suggests a different causal role in the development of delusional experiences; here, for example, a less direct and non-specific effect of experiencing a trauma might be paranoia. Indeed, previous research has provided strong evidence of a link between anxiety and paranoid thoughts (e.g., persecutory thinking; Freeman & Fowler, 2009; Garety & Freeman, 1999). In further support of a possible alternative route for delusions, Freeman and Fowler showed that trauma impacted non-specifically on delusions via anxiety but that adverse events seemed to work via a different route in the occurrence of hallucinations.

Research into the content associations of PLEs and life events has more recently involved samples at increased risk for psychosis. In a sample of young people with attenuated psychotic symptoms (N = 92; mean age = 18.0 years), symptoms with a sexual content were associated with a history of previous sexual trauma (Thompson et al., 2009). With a prodromal sample (N = 45, mean age = 19 years) it was found that a history of previous trauma was related to unusual thoughts focussed on themes of feeling watched, grandiose ideas of status and power, a lack of unusual negative thoughts regarding the self and non-negative voices (Falukozi & Addington, 2011).

In sum, research exploring content associations between PLEs and life experiences is beginning to emerge with young people at increased risk of developing psychotic disorder. However, as yet, this relationship has not been investigated with respect to childhood PLEs and adverse life events. Examining this relationship in younger samples is advantageous as life events are being assessed closer to their occurrence. Importantly, this work would shed light on the types of thematic associations that are relevant in the content of children's PLEs and life events and has obvious clinical implications for young people distressed by these experiences.

1. 7 The Current Study

The current study will examine the association between PLEs and both negative life events and bullying ('adverse life events') with a sample of clinically-referred 8-14 year olds, and is the first known study to explore this relationship with children as young as eight years. The associations between PLEs and adverse life events will be explored in several ways. First quantitative statistical analyses will be used to examine the nature of these associations with the current sample of younger aged children. Two aspects of these associations are important here: first, is there an association between increasing PLE severity and frequency of both negative, upsetting life events and bullying, and second, do such experiences increase the likelihood of experiencing a distressing PLE in a dose-response manner.

Negative life events will be assessed with the Life Events Interview (Wilkinson, Dubicka, Kelvin, Roberts, & Goodyer, 2009), a measure of recent negative life events. It includes personal disappointments to the self, physically dangerous events to self and others, and permanent losses. Two indices are important here and are used in the

analyses: (a) the total number of negative life events in the last year; and (b) the total number of negative life events in the last year that had a moderate or severely undesirable impact with upset that lasted for two weeks (referred to forthwith as 'upsetting negative life events'). Bullying will be assessed with the MDI, described previously. An overall bullying frequency score for the current school year will be calculated and used in analyses. PLEs will be assessed with the Psychotic-like Experiences Questionnaire (Laurens et al., 2007), a measure of sub-clinical psychotic symptoms (see below). Three indices are important here: (a) the total number of PLEs experienced in the previous two weeks; (b) the severity of the PLEs experienced in the previous two weeks (referred to forthwith as 'PLE severity'; calculation described below); and (c) the presence of a distressing PLE (i.e. rated as causing distress or impact).

In light of the literature summarised above (see Table 1.1) the following hypotheses were to be tested:

- Hypothesis 1a: There will be a significant positive correlation between PLE severity and the total number of upsetting negative life events
- Hypothesis 1b: There will be a significant positive correlation between PLE severity and the frequency of bullying
- Hypothesis 1c: A dose response relationship will characterise the association between the presence of a distressing PLE and the frequency of upsetting negative life events
- Hypothesis 1d: A dose response relationship will characterise the association between the presence of a distressing PLE and the frequency of bullying

Second, to overcome difficulties that might arise from relying on self-reported PLEs and life events, exclusively, the PLE-life event association will also be explored with parent reports of their children's PLEs and life events. The child-report version of the LEI will be adapted for use with parents (see below), generating a parent report of the overall number of negative life events their child experienced over the last year. A parent version of the PLEQ will also be administered yielding indices of (a) parent-

reported total number of PLEs their child experienced in the previous two weeks; and (b) parent-reported child PLE severity in the previous two weeks.

In their study, Arsenault et al. (2011) found that both child- and parent- reported bullying and maltreatment were associated with an increased risk of child-reported psychotic symptoms; however, observed effects were larger for child reports than parent reports of bullying. Also, Arsenault et al. and Schreier et al. (2009) reported a consistent pattern of results across child- and parent-reported bullying. Data from interview-based studies report parental unawareness of PLEs with lower prevalence rates for parent report (e.g., Kelleher et al., 2008). In light of this research, the following predictions were made here:

- Hypothesis 2a: There will be a significant positive correlation between parent-reported child negative life events and parent-reported child PLE severity and that this effect will be smaller than that found between child self-reported life events and PLE severity.
- Hypothesis 2b: The prevalence of child life events will be consistent across child self-report and parental report.
- Hypothesis 2c: Child self-report will show a higher prevalence of PLEs than parental report of child PLEs.

Third, following the work of Hardy et al. (2005) with adults and of Thompson et al. (2009) and Falukozi and Addington (2011) with sub-clinical and prodromal samples, respectively, the final part of the current work will explore content associations between PLEs and adverse life events. Specifically, a procedure for conducting an analysis of direct and indirect content associations between PLEs and adverse life events will be developed. Although such a program of research with children is novel, so no hypothesis can be derived from age-matched studies, the following prediction was made:

- Hypothesis 3: Both direct and indirect content associations will be evident in children's PLEs and adverse life events, in line with adult research

Chapter 2: Method

This chapter details the method employed to investigate the psychotic-like experience adversity link in a sample of clinically-referred 8-14 year-olds. It starts by outlining the author's involvement in the work, which was completed in the context of a larger study (Coping with Unusual Experiences for children Study, CUES, ISRCTN13766770), and then describes the participants in the current study, the recruitment process, the measures employed and procedure. The chapter ends by outlining the statistical considerations and analyses of the data.

2.1 Statement of Contribution

The author (SR) developed the four research questions and conducted the systematic review of the research literature on PLEs and trauma in young people. The author modified the Life Events measure (see below) used to collect parent data for the present study in consultation with supervisors (SJ, PS, SB). Research workers were trained and supervised in the use of this questionnaire by the author. The author contacted parents, who had given permission to be contacted for future research, and completed the Life Events measure, retrospectively, with them via phone. The author extracted information about PLEs and life events from the CBT research therapists' therapy sessions and formulations of the young person's difficulties. The author conducted all work on the content analysis, with two supervisors (SJ and PS) involved as independent raters. In addition, the author also directly recruited and assessed the young people and families participating in the CUES study. Assessment of participants involved a complete battery of measures for CUES. All data were entered into an online database by the author or research workers and were collated into SPSS and analysed by the author.

2.2 Participants

Participants in the current study were those recruited during the first 30 months of the CUES study, from July 2011 to January 2014. CUES is a randomised controlled trial of a manualised CBT intervention for young people reporting PLEs and emotional distress, in the context of a referral to community Child and Adolescent Mental Health services (CAMHS) for emotional and/or behavioural problems, but usually without a diagnosed mental health problem. CUES has a baseline screening and assessment

procedure designed to improve understanding of PLEs and their correlates (cognitive, affective, social and behavioural variables) in young people, which included some of the measures of interest for the current study (with others added by the author, as outlined in Section 2.1 above).

Young people aged 8-14 years were recruited from the non-urgent waiting lists of CAMHS in the South London and Maudsley (SLaM) NHS Foundation Trust boroughs of Southwark, Croydon, and Lewisham. These CAMHS provide outpatient assessment and treatment for people under the age of 18 years with emotional and/or behavioural difficulties. The London-Hampstead National Research Ethics Service (NRES) Committee (REC ref 11/LO.0023) granted ethical approval for the study. Research and Development (R & D) approval was granted by the SLaM R & D committee (ref R&D2011/028) and the CAMHS Clinical Academic Group (CAG).

2.2.1 Recruitment. The CUES study had approval to contact all CAMHS referrals, following an initial screen for urgent or very complex cases. Some were lost to recruitment as their cases were closed by CAMHS before the research team made contact with them (see Figure 2.1). The children and families were help seeking, and waiting times for routine assessment and intervention from CAMHS varied from several weeks to a year. All parents of a young person referred to the service were sent information sheets about CUES along with consent and assent forms (see Appendices A-D). This was followed by a telephone call within two weeks inviting them to participate.

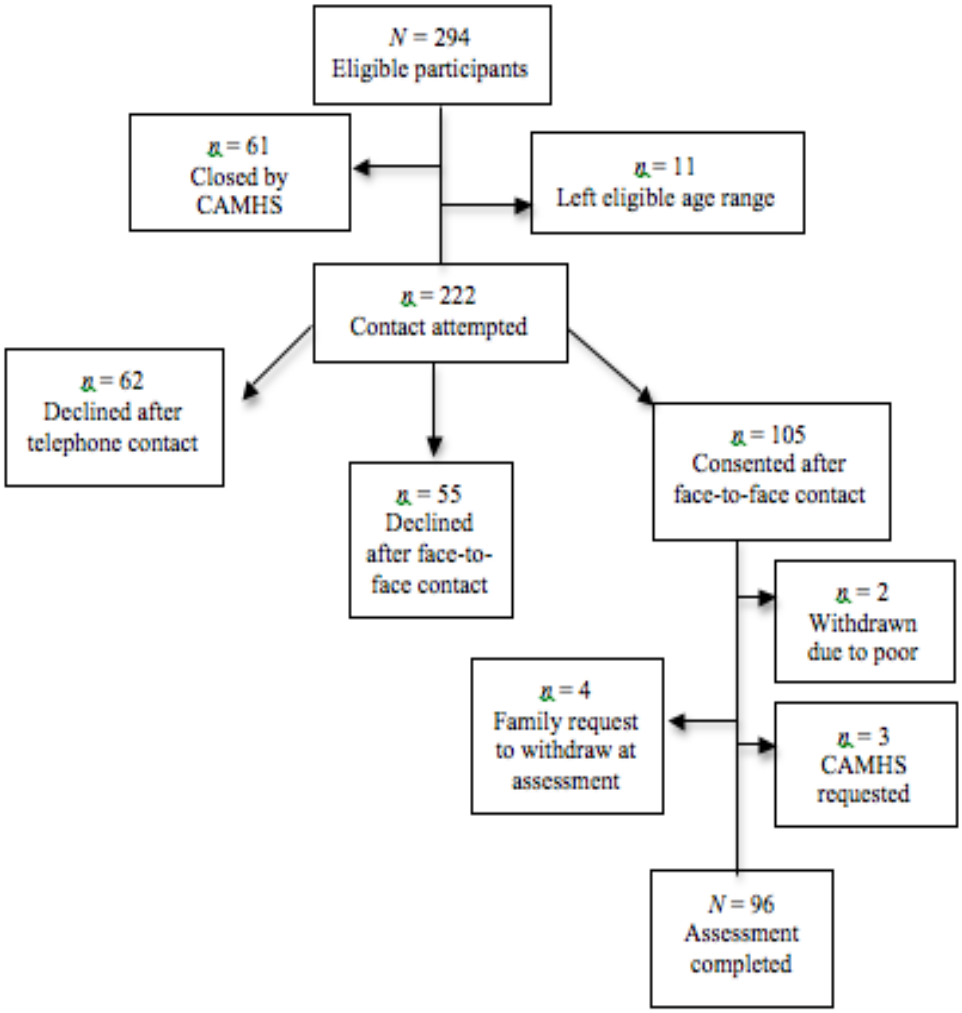

Figure 2.1. Recruitment flowchart.

Informed consent from the parent and assent from the young person was obtained after a member of the research team met with them and discussed the information sheets and answered any questions. Participants were reminded at several points that they could withdraw from CUES at any stage, without giving a reason, and that this would not impact on their involvement with, and receipt of treatment from, CAMHS. In the case that a young person reached the top of the CAMHS waiting list whilst participating in CUES, their CAMHS involvement continued as usual. If a young person's involvement with CAMHS ended whilst participating in CUES, their case remained open to the CAMHS team until follow-up assessments for the study were completed. If new information or that pertaining to any type of risk became apparent,

the CAMHS clinical teams were informed immediately so that appropriate action could be taken.

2.3 Measures

The measures employed to assess PLEs, negative life events and bullying are described in detail below and included as appendices. In addition to these measures, the Strengths and Difficulties Questionnaire was used to characterise the current sample and parents completed a questionnaire ascertaining demographic information; these are also detailed below.

2.3.1 The Strength and Difficulties Questionnaire (SDQ; Goodman, 1997).

The SDQ is a brief behavioural and emotional screening questionnaire that consists of 25 items and was designed for use with 3-17 year-olds. Items are summed to generate five clinical subscale scores (hyperactivity, emotional symptoms, conduct problems, peer problems, and prosocial behaviour). Items are in the form of brief statements which are rated on a 3-point scale (0 = *Not true*; 1 = *Somewhat true*; 2 = *Certainly true*). Individual subscale scores range from 0-10 and those for hyperactivity, emotional symptoms, conduct problems and peer problems are added together yielding a total difficulties score ranging from 0-40. For the emotional symptoms subscale, score from 0-5 are 'normal', of 6 are 'borderline', and from 7-10 are 'abnormal'.

The self-completion version of the SDQ for 11-17 year-olds was employed (Goodman, 1997; Appendix E). The SDQ has been validated both in terms of its ability to distinguish between clinic and community samples (Goodman, 1997) and as a screening device to detect children with a mental health disorder (Goodman, Renfrew, & Mullick, 2000). More recently, the SDQ has been shown not only to predict current psychopathology but also to predict disorder status three years later (Goodman & Goodman, 2009). Although the self-report version was originally designed for use with 11-17 year-olds, this version has been shown to have acceptable psychometric properties in 8-10 year-olds (Muris, Meesters, Eijkelenboom & Vicken, 2004). Cronbach's alpha for the total difficulties score in the current sample was acceptable at .74 (.65 - .81).

2.3.2 Caregiver Questionnaire. Demographic information about the young person and their parent was collected via this questionnaire, which was completed by the parent (see Appendix F). Demographics included both the young person's and the parents' date and place of birth, the young person's ethnicity, whether English was their first language, and family mental health history.

2.3.3 Measure of PLEs: Psychotic-like Experiences Questionnaire (PLEQ; Laurens et al., 2007). The PLEQ was developed as screen for PLEs in community samples of young people (Laurens et al., 2007; 2011). It consists of nine items (see Figure 2), five of which were adapted by Laurens et al. (2007) from the Diagnostic Interview Schedule for Children (Costello et al., 1982) and have previously been found to be predictive of schizophrenia-spectrum disorder (Poulton et al., 2000). For each question, participants selected one of three possible responses: 'Certainly True' (scored 2), 'Somewhat True' (scored 1) and 'Not True' (scored 0). Each item also contained questions indexing conviction, frequency, distress and impact over the previous two weeks. Each of these was summed across the nine items yielding a cumulative measure of conviction, frequency, distress and impact, referred to as PLE severity. The total number of PLEs endorsed was also computed by summing across the nine items. PLEs scoring one or more on either the distress or the impact subscales were categorised as 'distressing'; participants were grouped dichotomously according to whether or not they experienced any distressing PLEs. One additional question assessed the occurrence of PLEs in the previous year. Parents also completed an adapted version of this measure, where the wording was changed appropriately, reporting on their child's experience. Cronbach's alpha for the parent version was acceptable at .60 (95% CI = .46 - .71) and for the child version was good at .81 (95% CI = .75-.86).

Psychotic-like Experiences Questionnaire

Conviction

(0 Not true, 1 Somewhat True, 2 Certainly True)

1. Some people believe that their thoughts can be read. Have other people ever read your thoughts?*
2. Have you ever believed that you were being spent special messages through the television?*
3. Have you ever thought that you were being followed or spied on?*
4. Have you ever heard voices that other people could not hear?*
5. Have you ever felt that you were under the control of some special power?
6. Have you ever known what another person was thinking even though that person wasn't speaking?
7. Have you ever felt as though your body had been changed in some way that you could not understand?*
8. Do you have any special powers that other people don't have?
9. Have you ever seen something or someone that other people could not see?

* adapted from the Diagnostic Interview Schedule for Children

For each endorsed item:

Frequency: How often has it happened in the last two weeks?

0 Not at all, 1 Only once, 2 2-4 times, 3 5 or more times

Distress: How much has it upset you?

0 Not al all, 1 Only a little, 2 Quite a lot, 3 A great deal

Impact: How much has it made things hard at home or school?

0 Not al all, 1 Only a little, 2 Quite a lot, 3 A great deal

Total PLE Severity: Sum of conviction, frequency, impact, distress (range 0-99)

Figure 2.2. The Psychotic-like Experiences Questionnaire and scoring

2.3.4 Negative life events: Life Events Interview (LEI: Wilkinson, Dubicka, Kelvin, Roberts, & Goodyer, 2009). The LEI asks respondents about recent life events including: (a) personal disappointments to the self (failure to meet prior held expectations); (b) physically dangerous events (events that involved overt physical or mental risk or harm to the respondent); (c) physically dangerous events to others (events that involve overt physical or mental risk or harm to important others [family or friends]); and (d) permanent losses (e.g., exit events from the participant's social field; see Appendix G). The total number of negative life events experienced was calculated, along with an upsetting negative life events variable that was computed by summing events that had a moderately or severely undesirable impact and upset that lasted for two weeks. The following items were scored to create the total number of negative life events and the total number of upsetting negative life events variables: (a) item 1: Have

you changed school in the past year?; (b) item 2a: Have there been any changes in the number of people in your household in the past year? Has anyone left or joined your family?; (c) item 3: Have you moved house in the last 12 months?; (d) item 4: Have there been any disasters at home over the past year, like a fire, a flood or a burglary?; (e) item 6: In the last year, have you or any of your family or close friends had a serious illness or accident?; (f) item 7: Have you or any of your family or close friends spent time in hospital over the past year?; (g) item 8: Has any of your family or close friends died over the past 12 months?; (h) item 9: Have you lost a family pet over the last year?; (i) item 10: Have you lost touch with any good friends over the past tear? (e.g., moved away, changed school, etc); and (j) item 11a: Have you had any particular problems or difficulties with your friendships over the past year?. The measure has demonstrated good test-retest and inter-rater reliability and validity with parental reports (Wilkinson et al., 2009).

Parents completed a shorter version of this measure, developed by the author of this thesis, where they indicated if a particular life event (using the same items as for young people) had happened or not for their child, without giving any additional information about it (Appendix H). These scores were summed giving the total number of negative life events experienced by the young person in the previous 12 months. Cronbach's alpha for the child and parent versions of the LEI was acceptable: .47 (child; 95% CI = -.30 - .62) and .58 (parent; 95% CI = .35-.75).

2.3.5 Negative life events: Bullying. The 'victimisation at school' items from the Middle Years Development Instrument (MDI; Schonert-Reichl et al., 2012) were used to assess experiences of bullying during the current/most recent school year (Appendix I). A brief and clear definition of the various types of bullying is first provided. Respondents indicate how often (0 = *never;* 3 = *often)* they have experienced physical, verbal, social, cyber and any other type of bullying, yielding a maximum score of 15; higher scores reflect more bullying. The MDI has been employed in population-based research of child development and wellbeing (Guhn et al., 2012). It has demonstrated good internal consistency reliability and construct, convergent and discriminant validity (Schonert-Reichl et al., 2012). Cronbach's alpha for the current administration of this measure was acceptable at .71 (95% CI = .60 - .79).

2.4 Procedure for Administration of Self-report Measures

The above measures were administered as part of a wider CUES screening assessment battery (see Appendix J). The CUES study protocol involved re-administering these measures at three-months following initial completion and one month following completion of the CBT intervention. Data for the present study were collected at baseline only. The measures outlined (SDQ, PLEQ, LEI and Bullying questionnaire) were completed using an online survey (SelectSurvey.Net.2.8.5) administered via an iPad 2 (© Apple) with paper copies available, if necessary. The questionnaires were presented in varied fonts and colours with pictures relaying positive feedback to enhance engagement. The battery was typically administered in two sessions of 90 minutes with breaks and activities used as needed. Clinical judgement was used to successfully complete the measures and engage young people of different ages. For example, for younger children questionnaire items were usually read aloud by the researcher, while older children were asked to read these items aloud themselves. Younger children were given more explicit and frequent verbal praise and encouragement to keep them on task, while this was less frequent for older children. Also, younger children availed of more breaks between questionnaire completions, playing games and colouring in the pauses; older children often did not need a break.

Parents completed paper and pencil versions of their measures (PLEQ and LEI). Parents who had given consent to be contacted by the CUES study for participation in future research, were retrospectively approached via phone and invited to complete the LEI. To maximise response validity, the author only included data from parents who said they were able to accurately recall the required information to complete the LEI for the time period in which their child completed the LEI. This resulted in the inclusion of retrospective LEI data for 23 parents (i.e. data from parents who said they were unable to accurately recall the requisite information were excluded).

Sessions took place either at the young person's local CAMHS, at home or at school. On completion of the assessment, all participants were given a £5 voucher for the cinema or a book-shop.

2.5 Procedure for the Content Analysis of PLEs and Adverse Life Events

Twenty-five children had completed the CUES baseline screening and assessment phase, as described above, and met criteria for the CBT treatment offered as part of CUES, in the 30 month period from July 2011 to January 2014. The data for these 25 were used in the content analysis of PLEs and adverse life events, as the intervention included a comprehensive assessment of life events, carried out by the therapist. All of these children reported an adverse life event and a distressing PLE. The content analysis involved three main stages, which are outlined below.

2.5.1 Stage 1: Literature review. Given that this was the first study of this nature with young people, research that had explored psychotic symptoms and trauma content with adult samples was reviewed to identify themes that might be relevant to the current sample of 8-14 year-olds experiencing PLEs (see Table 2.1). From this literature, the following themes were identified as being possibly relevant for children's PLEs: *threat, persecution, emotional harm, physical harm, intrusiveness, danger and humiliation*.

Table 2.1

Studies of content and thematic ratings for psychotic symptoms and life events

Study	Sample	Mean age in years	Rating Themes
Raune et al. (2006)	First episode psychosis (N = 41)	29.6	PS: persecutory, grandiose, depressive LE: humiliation, loss, danger, self-esteem, intrusiveness
Hardy et al. (2005)	Non-affective psychosis (N = 75)	39.1	PS + LE: guilt, threat, intrusiveness, humiliation
Falukozi & Addington (2011)	Attenuated Positive Symptom Syndrome (N = 45)	19	PS + LE: perplexed by reality, emotionally harmed, physically harmed, watched/followed, grandiose intelligence/skill, grandiose status/power, hears voices, hears sounds, hears negative voices, feels numbness/vibrations, feels pain/burning, feels someone touching him/her, visual sensitivity/distortions, sees light/fire, sees vague figures/shadows, sees people, animals, olfactory sensations

Note. LE = Life events; PS = psychotic symptom.

2.5.2 Stage 2: Pilot Study 1. The aims of this pilot study were to: (a) identify how relevant the identified themes were for exploring the content associations of PLEs and adverse life events; and (b) examine inter-rater reliability in rating of these themes by the two independent raters**.** Data for nine of the 25 participants were used for this pilot study. This sub-sample of participants consisted of seven females and two males, with an average age of 12 years 2 months (*SD* = 2 years, 3 months), at completion of the CUES baseline assessment battery. Information on the content of PLEs and adverse life events was extracted from the detailed assessments conducted as part of the CBT intervention phase of CUES. The CBT therapist was asked to indicate the PLE and adverse life event that she thought was most distressing to the young person; it was these experiences that were used in the content analysis. Specifically, the author collated detailed descriptions of these distressing PLEs and adverse life events from the CBT research therapist's psychological formulation of the young person's difficulties. Formulations were pseudonymised and referred to only by the participants' alpha-numeric study identification code, and were supplemented by audio-recordings of therapy sessions.

For five of the participants a delusion-like experience was identified as distressing (being watched or followed: *n* = 3; suspicious/mistrust of others: *n* = 1; others out to harm me: *n* = 1), and for four participants a hallucinatory-like experience was identified as distressing (auditory: *n* = 2; auditory and visual: *n* = 2). In terms of life events, three participants had been exposed to violence, two to bullying and two to maltreatment by a parent, one had witnessed a shooting and one had non-resident status in the UK.

These PLE and life event descriptions were presented, in written format on paper, to two raters (both clinical psychologists, and independent of the therapy process) along with the themes identified in Stage 1, above, in the form of a booklet. Two types of associations were rated: (a) indirect or thematic associations between adverse life events and PLEs; and (b) direct content associations between adverse life events and PLEs.

For the indirect associations, PLE and adverse life event descriptions were considered separately with altered identifiers to mask common origins. Each rater was

given a booklet containing descriptions of nine PLEs and nine adverse life events, presented in a random order so that an individual participant's PLE and adverse life event could not be identified. Indirect associations or thematic ratings were defined as a thematic association between the life event and PLE. The raters were asked to indicate the extent to which each theme was evident in the PLE and adverse life event description. The themes identified in Stage 1 (threat, persecution, emotionally harmed, physically harmed, intrusiveness, danger, humiliation) were used here and were rated on a 4-point likert scale, similar to that employed by Hardy et al. (2005; '*absent*', '*possibly present'*, '*present*', '*don't know'*). Figures 2.3 and 2.4, below, show an example of the information given to the raters when rating adverse life events and PLEs, respectively. Following the rating process, the author paired the obtained ratings for each young person's PLE description and adverse life event description in a spread-sheet so that the ratings of indirect associations in PLEs and adverse life events by each rater could be compared and inter-rater reliability computed. The categories 'possibly present' and present' were combined creating an overall 'present' category.

Thematic Ratings of adverse life events.

Please circle the extent to which you think each of the themes is present in the description of the adverse life events.

Code ID: 003					
Mum has Bipolar disorder. When I was 10 she went to King's College Hospital to have an operation. Then she was sectioned and brought to the Maudsley Hospital for four months. I was staying with my gran, my dad came in the middle of the night and took me away from my gran to his house. I didn't want to go and it was very scary.					
Themes:					
Threat	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Persecution	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Emotionally Harmed	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Physically Harmed	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Intrusiveness	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Danger	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Humiliation	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Rejection	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW

Figure 2.3 Example of information presented to raters for rating themes present in a young person's adverse life event

Thematic Ratings of PLEs

Please circle the extent to which you think each of the themes is present in the description of the adverse life event.

Code ID: 006					
I can't trust anybody. I must always be on my guard. My dad and his family are cursed and they have also put a curse on me and that is why I am now doing bad at school.					
Themes:					
Threat	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Persecution	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Emotionally Harmed	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Physically Harmed	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Intrusiveness	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Danger	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Humiliation	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW
Rejection	ABSENT	POSSIBLY	PRESENT	PRESENT	DON'T KNOW

Figure 2.4. Example of information presented to raters for rating themes present in a young person's PLE

For the direct associations, PLE and adverse life event descriptions were considered simultaneously. The raters were presented with a different booklet where the PLE and adverse life event descriptions for each of the nine participants were presented together. Content ratings or direct associations were defined as a literal correspondence between the content of an adverse life event and PLE. To illustrate, a direct association would be present if a young person who was involved in a fire also saw visions of fire. The raters were asked to indicate if there was a literal correspondence between the PLE and adverse life event descriptions. Figure 2.5, below, shows an example of the information presented to raters for completion of a direct content rating for a participant. Following completion of the ratings, the author calculated how many direct associations the raters recorded.

Direct associations between PLEs and adverse life events

Please read the description of the PLE and adverse life event below and indicate if a direct association exists between these experiences

CUES ID – XX XXX
PLE: I can hear the voice of a man who threatened by mother with a knife whisper in my ear. He whispers that he will try to get me.
Adverse life event: I live with my mum and my aunt who is 16. My grandmother had a new boyfriend he tried to get my aunt to have sex with men but my mum found out and stopped it. My mum and my grandmother had a big fight and my grandmother's boyfriend wasn't allowed to come to the house. One night he came to our house when it was dark and was shouting and roaring and he threatened my mum with a knife.
Direct Association YES NO

Figure 2.5. Example of information presented to raters for completion of direct content associations between a young person's PLE and adverse life event

Agreement rates for the two independent raters are presented in Table 2.2, below. Overall, it is evident that agreement rates were lower for adverse life events in comparison with PLEs. Of note, low levels of agreement (i.e. agreement rate is at chance or lower) were observed for the presence of humiliation and physical harm in PLEs and for the presence of threat, persecution, physical harm, intrusiveness and humiliation in adverse life events. The agreement rate for direct associations was 89%.

Table 2.3, below, shows the extent to which each of the themes was evident in the PLE and adverse life event descriptions. This was calculated as an average across the two independent raters. There was considerable variability in the extent to which the themes were present in the PLE and adverse life event descriptions. Of note, rejection was not found to be relevant to either PLEs or adverse life events, while intrusiveness and persecution were more relevant to PLEs than adverse life events.

Table 2.2

Percentage agreement between the two independent raters for indirect content associations between PLEs and adverse life events in Pilot Study 1

Category	Theme	% Agreement
Indirect/Thematic Associations		
PLE		
	Threat	89
	Persecution	100
	Emotional Harm	100
	Physical Harm	55
	Intrusiveness	100
	Danger	78
	Humiliation	55
Adverse Life Event	Threat	55
	Persecution	55
	Emotional Harm	100
	Physical Harm	44
	Intrusiveness	22
	Danger	66
	Humiliation	55
Direct/ Content Associations		89

Table 2.3

The percentage of participants for which each theme was rated as present in PLEs and adverse life events in Pilot Study 1

Theme	PLE	Adverse Life Event
	%	%
Threat	94	72
Persecution	100	33
Emotional Harm	100	100
Physical Harm	67	55
Intrusiveness	100	33
Danger	89	78
Humiliation	44	78
Rejection	22	33

Given the 89% agreement, between the independent raters, for direct associations it seems that the descriptive information provided for each PLE and adverse life event was sufficient. However, the low agreement rates between the two independent raters were problematic, and this was especially the case for adverse life events where lower agreement rates were observed. Also, the high agreement rates for several themes (persecution, emotional harm, and intrusiveness) in ratings of PLEs possibly indicated a degree of overlap between them. For example, the same event could simultaneously be rated as both physical harm and threat. The ratings indicated that rejection was not relevant to either PLEs or adverse life events for the current sample, while emotional harm was evident in all PLEs and adverse life events, questioning the usefulness of including it.

At this point, an expert (Dr. Amy Hardy) in the PLE-life event content association adult literature was consulted by the author for discussion about the use of relevant themes with the current sample of 8-14 year olds. On the basis of this discussion, it was decided that, given the similarity between the themes of threat, persecution, emotional harm, physical harm and danger, these would be collapsed into one theme: threat. Intrusiveness and humiliation were retained, as despite the low level of correspondence in ratings for these, they have emerged as important variables in research with adults. In addition to these, 'guilt' was also included, as it has proved to be important in adult research of this nature. Detailed descriptions of the individual themes were provided at the start of the rating process to aid the raters' understanding and improve inter-rater reliability.

In order to ensure that these four new themes (threat, intrusiveness, humiliation and guilt) were relevant to the experiences of the current sample of young people, the themes, along with the descriptions of the PLEs and adverse life events, were presented to the CBT therapist. The CBT therapist indicated that the themes were appropriate for these young people and a second round of coding with the new themes and the PLE and adverse life event descriptions, for the nine participants used in Pilot Study 1 was conducted. This second pilot study is described below.

2.5.3 Stage 3: Pilot Study 2. The aims of this pilot work were, similarly to those listed above for Pilot Study 1, to: (a) identify how relevant the four refined

themes were for exploring the content associations of PLEs and adverse life events; and (b) examine inter-rater reliability in rating of these themes by the two independent raters. To these ends, a second round of coding, with the new themes and the PLE and adverse life event descriptions used in Pilot Study 1 was conducted. The procedure for this pilot study was the same as that for Pilot Study 1, with the exception that the independent raters (who also remained the same) were provided with a definition of each theme (see Table 2.4) and spent some time discussing these together, prior to separately undertaking the ratings. The direct content associations were not repeated. The indirect associations were examined in the same manner as described above, for Pilot Study 1.

Table 2.4

Definition of themes given to raters

Theme	Definition
Humiliation	Involves the person being socially devalued in relation to self or others. This could be interpersonal (e.g., rejection by a parent or failure), social (e.g., a close family member committing murder), or personal (e.g., sexual assault). This includes anything that occurs in a social context and is related to stigmatisation.
Intrusiveness	Involves interference and attempted control of the participant by others, often involving intent to harm. This is where there is an intention to control in a harmful way and includes physical and sexual abuse. Sexual abuse will always be rated as intrusive.
Guilt	Where the event/PLE would be likely to evoke a remorseful awareness if being responsible for having done something wrong. This is associated with the attribution of blame or responsibility. It includes the possibility or potential of the event to result in guilt.
Threat	Involves the person thinking that they or someone else might be killed or injured, receiving actual injury, or witnessing someone else receiving injury or being killed. This relates to danger and a risk of harm. In young people this also includes threat to parental attachment and parental well-being.

The percentage agreements for the ratings of indirect associations for the two independent raters are presented in Table 2.5. It is evident that, overall, there were higher levels of agreement in ratings for both PLEs and adverse life events, than in the ratings undertaken in Pilot Study 1. Again, agreements were higher for ratings of PLEs

in comparison with adverse life events. Table 2.6 shows the extent to which each of the four themes was evident in the PLE and adverse life event descriptions. Threat and intrusiveness were rated most frequently in both PLEs and adverse life events.

Table 2.5

Percentage agreements for the two raters for the four themes in Pilot Study 2

Category	Theme	% Agreement
PLE		
	Threat	100
	Intrusiveness	100
	Guilt	100
	Humiliation	89
Adverse Life Event	Threat	89
	Intrusiveness	89
	Guilt	67
	Humiliation	67

Table 2.6

The percentage of participants for which each theme was rated as present in PLEs and adverse life events in Pilot Study 2

Theme	PLE	Adverse Life Event
	%	%
Threat	100	90
Intrusiveness	100	80
Humiliation	50	70
Guilt	40	50

Given both the good levels of inter-rater agreement and evidence that the themes seemed to be both present and, therefore, relevant to the PLEs and adverse life events of these young people, it was decided to employ the same procedure as for Pilot Study 2, for the main content analysis study. Thus, the four themes of threat, intrusiveness, humiliation and guilt were used to explore indirect content associations with the data from the 16 remaining participants. The procedure for the rating of direct content associations was the same as that outlined in Pilot Study 1. The results of these direct and indirect content analyses are presented in Section 3.2.3.

In sum, the procedure for conducting the content analysis was developed based on available literature and expertise with adult samples, along with the clinical expertise of clinicians working with children (a clinical psychologist and a CBT therapist offering the manualised CBT therapy for CUES), and the pilot work outlined above.

2.6 Statistical Considerations

2.6.1 Power calculations. Power was calculated using *G*Power 3* for Windows Vista 2006. Campbell and Morrison (2007) reported an effect size equivalent to a Pearson's correlation of $r = .29$ for the association between auditory hallucinations and bullying in 14-16 year olds. Power analysis revealed that a sample size of 63 provided a power of .99 to detect the same effect size for the relationship between PLEs and bullying at the .05 level, one-tailed, using correlational analyses (Hypothesis 1). Nishida et al. (2008) reported an odds ratio of 2.93 for the effect of bullying on PLEs with 12-15 year-olds. Power analysis showed that a sample size of 68 provided a power of .95 to detect the same effect size for the relationship between PLEs and negative life events/bullying at the 0.05 level, one tailed, using logistic regression analyses (Hypothesis 1).

Previous studies have not reported effect size equivalents of correlational analyses that could be used to ascertain a power calculation for parent reported PLEs and life events. However, Arsenault et al. (2011) reported an odds ratio of 2.47 for the effect of maternal reported bullying on the psychotic symptoms reported by 12 year-olds with a logistic regression analysis.

2.6.2 Planned Statistical Analyses. Statistical analyses were carried out using SPSS for Windows (Version 18.0). The assumption of normal distribution was tested for each key variable using the Kolmogorov-Smirnov test of normality and visual inspection of the quantile-quantile plots and the values of skew and kurtosis. Z-scores were examined to identify any outliers above 3.29 (Field, 2005). The child-reported PLE severity, parent-reported total PLEs and PLE severity, bullying total, physical bullying, cyber bullying, other bullying were not normally distributed consequently non-parametric analyses were conducted with these variables. A small amount of data were missing due to participant time constraints, fatigue, or participant inattention. Details of missing data are given in Appendix K. The Hochberg step-up Bonferroni

procedure was used to control for multiple comparisons and to reduce the family-wise error rate (Rom, 2013). In all cases parametric tests were used for data that had a normal distribution, while non-parametric tests were used where data did not have a normal distribution.

Demographic variation on the Psychotic-like Experiences Questionnaire (PLEQ), Life Events Interview (LEI) and bullying measure was examined in the following ways. First, associations with age were examined with Spearman's rho rank order correlations and Pearson product-moment correlations. Second, gender differences were examined with independent *t*-tests or Mann Whitney U tests. Third, Chi Square tests for independence were also conducted to explore gender differences on individual items on the PLEQ, LEI and bullying questionnaire. Yates continuity correction was reported for the LEI as this compensates for the overestimate of the chi-square value when used with a 2 by 2 table. Fourth, to determine if there was a significant effect of ethnicity or family mental health history, one-way Analysis of Variances (ANOVA) or the Kruskal Wallis H test were employed.

The association between child and parent reported PLEs and between child and parent reported negative life events were first examined with Spearman's rho rank order correlations or Pearson product moment correlation coefficents. The Kappa measure of agreement was computed to ascertain the consistency between child and parent ratings of the PLEQ and LEI. Pearson product-moment correlation coefficents were used to examine associations between the individual bullying sub-types. Pearson product-moment correlations and Spearman's rho rank-order correlations were conducted to explore the relationships between PLEs, negative life events (for both child-reported and parent-reported data), and bullying.

Two independent binary logistic regression analyses were used to determine if frequency of upsetting negative life events and bullying were associated with an increased likelihood of a distressing PLE. The assumptions for adequate sample size and absence of mutlticollinearity were met. One outlier was identified on the LEI and the bullying questionnaire child data. Sensitivity analyses showed that the removal of these outliers did not result in a significant difference in results, thus they were retained in analyses.

Chapter 3: Results

The characteristics of the current sample will first be described, and descriptive data relating to the main measures will be presented, before results of hypothesis testing are presented.

3.1 Part One: Overview of Participants and Descriptive Data

3.1.1 Characteristics of the current sample. The sample consisted of 96 young people (males: $n = 61$) who had been referred to their local CAMHS, with a mean age of 11 years and 6 months ($M = 11.5$ years; $SD = 1.99$ years). Table 3.1 provides demographic information for the child and parent samples. This information was taken from the Caregiver Questionnaire (Appendix F), which was completed by parents. Eighty-nine of these children completed the SDQ. The average total difficulties score, across the sample, on the SDQ was 16.66 ($SD = 6.72$). Table 3.2 presents means scores on the SDQ subscales along with the numbers of participants scoring in the 'normal', 'borderline' and 'abnormal' ranges. This table also presents mean scores from a community sample, for comparison.

Parents for 90 of the 93 children who completed the PLEQ completed the parent version of the measure, reporting on the child's experience. Thirty-six parents completed the measure of life events, reporting on their child's experience. Of these 36 parents, 33 also completed the PLEQ. These were predominantly mothers (70%) of the young person with a mean age of 40 years and 2 months ($SD = 7$ years; 8 months).

Table 3.1

Demographic information for children (n = 96, except where indicated) and their parent

Children	% (*n*)
Gender	
Males	63 (61)
Females	33 (35)
Ethnicity	
White: British/ Irish/ Other	49.5 (46)
Black: Black British/ Other	32.3 (30)
Mixed Race	10.8 (10)
Asian or Asian British: Indian/ Pakistani/ Bangladeshi/ Other	4.3 (4)
Latin American	2.2 (2)
Other	1.1 (2)
First Language	
English	93 (89)
Parents (*n* = 90)	
Relationship to the child	
Mother	69.8 (67)
Father	8.3 (8)
Mother and Father	5.2 (5)
Grandmother	2.1 (2)
Step-mother	1 (1)
Sister	1 (1)
Legal Guardian	1 (1)
Family Mental Health History	
Positive	63 (61)
Negative	19.8 (19)
Not Known	16.6 (16)

Table 3.2

Mean scores for SDQ subscales and frequencies of participants in the categories 'normal', 'borderline' and 'abnormal'

Subscale	Mean (SD) from a community sample*	Mean (*SD*)	'Normal' (%)	'Borderline' (%)	'Abnormal' (%)
Total	10.4 (5.4)	16.66 (6.7)	40.1	12.3	36.9
Emotional	2.6 (2.1)	5.25 (2.5)	45	22.5	32.5
Conduct	2.2 (1.6)	3.28 (2.1)	56.2	13.5	30.2
Hyperactivity	3.7 (2.3)	4.99 (2.6)	54	16.9	29.2
Peer	2.0 (1.7)	3.14 (2.1)	61.8	26.9	11.2
Prosocial	7.4 (1.7)	7.45 (2.1)	80.9	11.2	7.8

Note. * data on community sample taken from Muris et al. (2004).

3.1.2 The Psychotic-like experiences questionnaire.

3.1.2.1 Child-reported PLEs. Eighty-three percent (*n* = 77) of children self-reported at least one PLE for the previous two weeks, and for 49% of these the experiences seemed to have persisted over the past year. Over half of the overall sample (52%) and 61% of children who reported a PLE (*n* = 47) experienced 'Quite a lot' or 'A great deal' of *upset* as a result of a PLE in the previous two weeks. Just under half of the overall sample (45%) and 52% of children who reported a PLE (45%; *n* = 40) recorded 'Quite a lot' or 'A great deal' of *impact* on their life at home or at school as a result of a PLE in the previous two weeks. The average number of PLEs endorsed was 3.15 (*SD* = 2.52) and the average PLE severity score across participants was 15.82 (*SD* =15.85). Table 3.3 shows the numbers of children reporting PLEs, the descriptive statistics, prevalence (frequency of endorsement), and associated distress and impact for the nine PLE items. Responses from a normative sample are also presented, for comparison.

Table 3.3

Descriptive data for the child version of the PLEQ

PLE Item (n = 93)	Descriptive Statistics	Normative Sample*	Response Prevalence			Associated Distress	Associated Impact
	Mean (SD)	Prevalence (%)	NT (%)	ST (%)	CT (%)	Mean (SD)	Mean (SD)
3. Have you ever thought that you were being followed or spied upon? (Followed/spied on)	.74 (.83)	30.3	49	24	24	.55 (.84)	.43 (.79)
4. Have you ever heard voices that other people could not hear? (Voices)	.73 (.87)	34	53	17	27	.54 (.92)	.44 (.84)
9. Have you ever seen something or someone that other people could not see? (Seen things)	.72 (.83)	27.3	50	24	23	.62 (1.04)	.52 (.93)
6. Have you ever known what another person was thinking even though that person wasn't speaking? (Mind reading)	.57 (.77)	22.7	58	22	17	.26 (.57)	.21 (.45)
8. Do you have any special powers that other people don't have? (Special powers)	.48 (.76)	19.4	66	16	16	.16 (.47)	.19 (.56)
1. Some people believe that their thoughts can be read. Have other people ever read your thoughts? (Thoughts read)	.43 (.66)	9.0	65	23	9	.22 (.57)	.27 (.69)
5. Have you ever felt that you were under the control of some special power? (Control of a power)	.36 (.65)	13.1	71	17	9	.41 (.89)	.38 (.82)
7. Have you ever felt as though your body had been changed in some way that you could not understand? (Body change)	.34 (.67)	20.4	74	13	10	.24 (.58)	.19 (.54)
2. Have you ever believed that you were being sent special messages through the television? (Sent messages)	.30 (.64)	9.4	77	10	9	.14 (.41)	.12 (.44)

Note. * community sample = Laurens et al. (2007) where 264 9-12 year-olds completed the PLEQ; NT = 'Not True'; ST = 'Somewhat True'; CT = 'Certainly True'

Analyses of demographic variation in PLEs first showed that there were no significant associations for age on the PLE total (r = .01; p = .928) or PLE severity scores (r_s = .06; p = .558) and second that these variables were not significantly different for boys and girls (p values all > .087). Third there was a statistically significant difference in the number of males and females reporting 'Not True' (Males: n = 36 [77%]; Females: n = 11 [23%]), 'Somewhat True' (Males: n = 15 [65%]; Females: n = 8 (35%]), and 'Certainly True' (Males: n = 8 [35%]; Females: n = 15 [65%]) to the spied on/followed item (χ^2 = [2, n = 93] = 11.68, p = .027, phi = 0.35). Gender differences for the other eight PLEQ items were not statistically significant (χ^2 < 4.68, ps > .099). Fourth, the effect of family mental health history and ethnicity on the PLEQ was not significant (ethnicity: p values all >.239; family mental health history: p values all >.059).

3.1.2.2 Parent-reported PLEs. Forty-six percent of parents (n = 41) reported that their child had a PLE in the previous two weeks, and for 63% these experiences seemed to have persisted over the last year. Just over a quarter of the total sample of parents (26%) and over half (52%) of those who reported a PLE for their child (n = 24) indicated that their child had been 'Quite a lot' or 'A great deal' *upset* as a result of a PLE in the previous two weeks. Just under a quarter of the total sample of parents (24%) and 20% of those that reported a PLE for their child (n = 22) indicated that their child had experienced 'Quite a lot' or 'A great deal' of *impact* on home or school life as a result of a PLE in the previous two weeks. The average number of PLEs endorsed was 1.26 (SD = 1.92) and the average PLE severity score was 15.16 (SD = 13.41). Table 3.4 shows the numbers of parents reporting PLEs, the descriptive statistics, prevalence (detailed by response option), and associated distress and impact for the nine PLEQ items.

Table 3.4

Descriptive data for the parent version of the PLEQ

PLE Item (n = 92)	Descriptive Statistics	Response Prevalence (%)			Associated Distress	Associated Impact
	Mean (SD)	NT	ST	CT	Mean (SD)	Mean (SD)
4. Has your child ever heard voices that other people couldn't hear? (Voices)	.34 (.71)	78.9	7.8	13.3	.32 (.80)	.30 (.80)
3. Has your child ever thought that she/he was being followed on or spied upon? (Followed/spied on)	.26 (.57)	81.1	12.2	6.7	.28 (.73)	.22 (.68)
9. Has your child ever seen something or someone that other people could not see? (Seen things)	.20 (.54)	86.7	6.7	6.7	.17 (.57)	.16 (.56)
1. Some people believe that their thoughts can be read. Has your child ever thought that other people could read his/her thoughts? (Thoughts read)	.12 (.42)	91.1	5.6	3.3	.11 (.41)	.08 (.37)
6. Has your child ever claimed to know what another person was thinking even though that person was not speaking? (Mind reading)	.12 (.42)	91.1	6.7	1.1	.07 (.33)	.09 (.42)
8. Has your child ever claimed to have special powers other people don't have? (Special powers)	.09 (.32)	92.2	6.7	1.1	.12 (.54)	.10 (.50)
7. Has your child ever thought that his/her body had been changed in some way that he/she couldn't understand? (Body change)	.09 (.36)	93.3	4.4	2.2	.08 (.40)	.08 (.43)
5. Has you child ever thought that he/she was under the control of some special power? (Control of a power)	.04 (.21)	93.3	4.4	2.2	.01 (.11)	.01 (.11)
2. Has your child ever believed that he/she was being sent special messages through the television or the radio, or that a programme had been arranged just for him/her alone? (Sent messages)	.02 (.15)	97.8	2.2	0	.03 (.24)	.0 (.0)

Note. NT = 'Not True'; ST = 'Somewhat True'; CT = 'Certainly True'.

3.1.2.3 Comparison of child- and parent-reported PLEs. Child PLE severity was significantly associated with the number of PLEs endorsed by parents (r_s [90] = .36; $p < .05$) and parent-reported PLE severity (r_s [90] = .36; $p < .05$). However, the number of PLEs endorsed by children and parents were not significantly associated ($r = .33$; $p > .05$). Examination of response frequencies, for the endorsement of *any* PLE in the previous two weeks (as opposed to a *specific* PLE), shows that for the 83% of children who self-reported a PLE, half of these children's parents also reported a PLE, while half did not endorse a PLE for their child. For the 17% of children who did not self-report a PLE, 80% of their parents also did not endorse a PLE for their child, while 20% did endorse a PLE.

Second, kappa measures of agreement were computed for child and parent ratings of the individual PLEQ items. Table 3.5 presents information about the level of agreement between these ratings. Of the nine items, there was agreement in ratings for three and these varied from 'weak' to 'fair', using the methods of Peat (2001; 0.4 = 'fair' ; 0.5 = 'moderate'; 0.7 = 'good'; 0.6 = 'very good'). The highest level of agreement was observed for hearing voices, followed by seeing someone or something and body changes.

Table 3.5

Kappa levels of agreement between child and parent ratings of PLEQ by item

PLE (n = 90)	Kappa	Interpretation of level of agreement
Thoughts read	.12	n/s
Being sent special messages	.02	n/s
Being followed or spied on	.05	n/s
Hearing voices	.34**	Fair
Under control of a special power	.10	n/s
Read others thoughts	.09	n/s
Body changes	.15*	Weak
Have special powers	.00	n/s
Seeing things or someone	.24**	Weak
Any PLE in last year	.16*	Weak
PLE before last year	.16	n/s

Note. n/s = not significant; *, $p < .05$; ** $p < .001$.

3.1.3 The life events interview.

3.1.3.1 Child-reported life events. Ninety-one children completed the LEI. Of these, 88% reported the occurrence of at least one negative life event in the previous

year and 65% reported the occurrence of at least one upsetting negative life event, in the previous year (i.e. scored as having a moderate or severely undesirable impact with upset that lasted for two weeks). Table 3.6 outlines the prevalence of negative life events, including those that were rated as upsetting, and descriptive statistics. Prevalence rates for a clinical sample, for the purposes of comparison, are presented in Appendix L. Over 17% of children reported that another event not included in the LEI had a moderate or severe impact with upset that lasted for more than two weeks. These events included a family member being away, the young person getting mugged, the young person being chased, maternal stress, being told that you had half-brothers and half-sisters that you were not aware of.

The average number of negative life events reported was 2.77 (*SD* = 2.06) and the average number of upsetting negative life events was 1.04 (*SD* = 1.39). In terms of important life events that happened before the previous year, children listed some of the following: family deaths, parental divorce or separation, bullying, friendship difficulties and personal accidents (e.g., being hit by a firework and falling down stairs).

Table 3.6

Descriptive data for the child version of the LEI

(*n* = 91)	Descriptive Statistics	Life event prevalence	Upsetting life event prevalence
	Mean (SD)	%	%
7a. Have you or any of your family or close friends spent time in hospital over the past year? (Hospital)	.51 (.50)	47.9	22.9
11a. Have you had any particular problems or difficulties with your friendships over the past year? (Friendship problems/difficulties)	.47 (.50)	44.8	19.8
6. In the last year, have you or any of your family or close friends had a serious illness or accident? (Serious illness/accident)	.45 (.50)	42.7	28.1
10. Have you lost touch with any good friends over the past year? (Lost touch friends)	.41 (.49)	38.5	12.5
8. Has any of your family or close friends died over the past 12 months? (Death)	.32 (.47)	30.2	15.6
1. Have you changed school in the past year? (Changed School)	.27 (.45)	26	2.1
2a. Have there been any changes in the number of people in your household in the past year? Has anyone left or joined your family? (Household changes)	.25 (.27)	24	5.2
9. Have you lost a family pet over the last year? (Pet Death)	.25 (.27)	24	15.6
12. Is there any other event which has occurred over the past 12 months involving you, your family or close friends which should be mentioned? (Other event)	.20 (.40)	18.8	17.7
3. Have you moved house in the last 12 months? (Moved house)	.14 (.35)	13.5	1
4. Have there been any disasters at home over the past year, like a fire, a flood or a burglary? (Disasters)	.11 (.31)	10.4	4.2
13. Thinking about things that upset you a lot, are there any other really important things that have happened to you before this last year? (Past)	.49 (.50)	46.9	33.3

Analyses of demographic variation in negative life events first showed no significant association between age and either negative life events or upsetting negative life events (r values all < .14; p values all > .19), and second, no significant gender

differences (p = .078) in the number of negative life events reported by boys (M = 2.48; SD = 2.05) and girls (M = 3.27; SD = 1.99); however, girls (M = 1.88; SD = 1.50) reported a significantly greater number of upsetting negative life events than boys (M = 1.19; SD = 1.26; t [89] = 2.35, p = .022). Third, there was a significant gender difference for the friendship difficulties/problems item (χ^2 = [1, n = 91] = 7.80, p = .002, phi = 0.32), with more girls (yes: n = 22 [51%]; no: n = 11 [23%]) than boys (yes: n = 20 [49%]; no: n = 37 [77%]) reporting friendship difficulties/problems. Gender differences for the other LEI items were not statistically significant (χ^2 < .93; ps > .064). Fourth, the effects of ethnicity (p = .671) and family mental health history (p = .105) on the LEI were not significant.

3.1.3.2 Parent-reported life events. In total, 36 parents completed the LEI (23 retrospectively; 13 face to face; 55 unable to be contacted, unable to remember or did not consent to future contact). Of these, 87% of parents reported that their child had experienced a negative life event in the previous year. Table 3.7 shows the prevalence of parent reported negative life events. The average number of life events reported by parents for their children was 2.89 (SD = 2.12).

Table 3.7

Descriptive data for the parent version of the LEI

Life Event	Prevalence
17. Thinking about things that upset your child a lot, are there any other really important things that have happened to your child before this last year? (Past)	57
12. Has your child had any particular problems or difficulties with friendships over the past year? (Friendship problems/difficulties)	50
1. Has your child changed school in the past year? (Changed School)	35.7
5. In the last year, has your child or any of your family or close friends had a serious illness or accident? (Serious illness/accident)	31.7
6. Has your child or any of their family or close friends spent time in hospital over the past year? (Hospital)	31.3
11. Has your child lost touch with any good friends over the past year? (Lost touch friends)	21.4
16. Is there any other event which has occurred over the past 12 months involving your child, their family or close friends which should be mentioned? (Other event)	22
2. Have there been any changes in the number of people in your child's household in the past year? Has anyone left or joined their family? (Household changes)	19
10. Has your child lost a family pet over the last year? (Pet Death)	19
9. Has any of your child's family or close friends died over the past 12 months? (Death)	11.9
3. Has your child moved house in the last 12 months? (Moved house)	9.5
4. Has there been any disasters at your child's home over the past year, like a fire, a flood or a burglary? (Disasters)	4.9

3.1.3.3 Comparison of child- and parent-reported life events. Correlational analyses showed that there was no significant association between parent report of a negative life event and child report of either a negative life event or an upsetting negative life event (r values all < .49; p values). Examination of response frequencies, for the endorsement of *any* negative life event over the last year (as opposed to a *specific* negative life event), shows that of the 88% of children who reported a negative life event, nearly 88% of their parents also reported a negative life event for their child. Of the 12% of children that did not report a negative life event, all of their parents reported a negative life event for them.

Kappa measures of agreement were computed for child and parent ratings of individual LEI items. Table 3.8 presents information about the level of agreement. Of the 12 items, there was agreement in ratings for five and these varied from

'moderate' to 'fair', using the methods of Peat (2001; 0.4 = 'fair' ; 0.5 = 'moderate'; 0.7 = 'good'; 0.6 = 'very good'). The highest level of agreement was observed for the hospital item, followed by household changes, moving house and changing school.

Table 3.8

Kappa levels of agreement between child and parent ratings of the LEI

Life Event (n = 36)	Kappa	Interpretation of level of agreement
Hospital	.54**	Moderate
Problems/difficulties with friendships	.27	n/s
Serious illness or accident	.20	n/s
Lost touch with good friends	.25	n/s
Death of a family member or close friend	.32*	Fair
Changed school	.40*	Fair
Household changed	.43*	Fair
Death family pet	.25	n/s
Moved House	.43*	Fair
Disaster	.07	n//s
Other event	.18	n/s
Any event	-.08	n/s
Event before this year	-.12	n/s

Note. n/s = not significant; *, $p < .05$; ** $p < .001$.

3.1.4 Bullying. Ninety children completed the bullying questionnaire. The average total bullying score was 3.34 (*SD* = 3.15) with an overall prevalence of bullying at 75% (i.e. three quarters of the sample reported a bullying experience). Over half of the sample reported the occurrence of two types of bullying. Table 3.9 presents descriptive statistics and prevalence rates for bullying along with normative data from a school-based sample, for comparison.

Table 3.9

Descriptive statistics and prevalence of bullying

Bullying (n = 93)	Mean (SD)	Prevalence (%)	Normative Sample* (%)
Total	3.34 (3.2)	75.3	-
Physical	.75 (1.0)	46.2	11
Verbal	1.19 (1.2)	55.9	26
Social	.89 (1.1)	47.3	16
Cyber	.28 (.7)	19.4	1
Other	.23(.6)	15.1	-

Note. *Normative sample = Schonert-Reichl (2009) with 1,226 9-12 year-olds.

Analyses of demographic variation on the bullying questionnaire first showed that there was a significant association between age and the total bullying score (r_s= .21; p = .043), but no association for age and the individual bullying sub-types (r values all < .25; p values all > .075). Second, girls (M = 4.69; SD = 3.58) reported significantly more bullying than boys (M = 2.64; SD = 2.64; t [90] = -3.139, p = .006) and this difference was also evident for social bullying (t [90] = -3.02, p = .012; girls: M = .55; SD = .90; boys: M = .14; SD = .39) and cyber bullying (t [90] = -4.26, p = .000; girls: M = 1.48; SD =1.18; boys: M = .58; SD = .86). Third, gender differences for each of the other bullying sub-types were not statistically significant (ps > .23). Fourth, there was no significant effect of family mental health history (p = .35) and ethnicity (p = .723) on the bullying questionnaire.

3.2 Part Two: Hypothesis Testing

3.2.1 The relationship between child-reported PLEs, negative life events and bullying.

Hypothesis 1
(1a): There is a significant positive correlation between PLE severity and the total number of upsetting negative life events
(1b): There is a significant positive correlation between PLE severity and the frequency of bullying
(1c): A dose response relationship will characterise the association between the presence of a distressing PLE and the frequency of upsetting negative life events
(1d): A dose response relationship will characterise the association between the presence of a distressing PLE and the frequency of bullying

3.2.1.1 Correlations between PLEs, life events and bullying. Pearson and Spearman's rho correlations were run to test associations between PLEs, life events and bullying. Results are presented in Table 3.10.

Given the significant associations between PLE severity and both upsetting negative life events and bullying the relationship between these variables was further explored with regression analyses. These would determine if increasing frequency of upsetting negative life events and bullying were associated with a statistically significant increased likelihood of experiencing a distressing PLE, when controlling for the possible confounding effects of gender, age, and emotional and behavioural difficulties on the SDQ. Such analyses would also test for a dose response relationship between the adversity and PLE variables, by clearly showing whether step increases in exposure to adversity (increasing numbers of upsetting negative life events or frequency of bullying) are associated with a significantly increased likelihood of experiencing a distressing PLE.

Table 3.10

Correlation matrix showing associations between child- and parent-reported PLEs, negative life events and bullying (N = 93).

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13
1. PLEs endorsed	-	.95*	.36	.35	.36*	.23	.21	.26	.32	.15	.33	.34	.26
2. PLE Severity	-	-	.38*	.39*	.43*	.31	.31	.25	.36	.20	.36*	.36*	.22
3. Negative Life Events	-	-	-	.82*	.29	.11	.12	.34	.27	.20	.33	.27	.39
4. Upsetting negative life events	-	-	-	-	.15	.08	.03	.20	.27	.15	.40*	.37*	.49
5. Bullying Total	-	-	-	-	-	.73*	.84*	.71*	.47*	.47*	.07	.11	-.01
6. Physical Bullying	-	-	-	-	-	-	.59*	.27	.24	.27	.08	.13	.13
7. Verbal Bullying	-	-	-	-	-	-	-	.43*	.33	.28	-.05	-.02	-.17
8. Social Bullying	-	-	-	-	-	-	-	-	.36*	.36*	.06	.01	.07
9. Cyber Bullying	-	-	-	-	-	-	-	-	-	.24	.09	.13	-.01
10. Other Bullying	-	-	-	-	-	-	-	-	-	-	.13	.06	-.08
11. Parent PLEs Endorsed	-	-	-	-	-	-	-	-	-	-	-	.88*	.28
12. Parent PLE severity	-	-	-	-	-	-	-	-	-	-	-	-	.26
13. Parent Negative Life Events	-	-	-	-	-	-	-	-	-	-	-	-	-

Note.*$p < .001$; PLE: Psychotic-like experience

3.2.1.2 Regression analysis assessing the relationship between distressing PLEs and upsetting life events.

A binary logistic regression analysis with the number of upsetting negative life events recorded (0, 1, 2, and 3 or more) as a predictor variable and the occurrence of a distressing PLE as the dependent variable was conducted. Gender, age and the SDQ total difficulties score were also included to control for the confounding effects of these variables. The full model containing all predictors was statistically significant, χ^2 (6, N = 86) = 41.80, p < .001, indicating that the model was able to distinguish between participants who did and did not report a distressing PLE. The model as a whole explained 53% (Nagelkerke R Square) of the variance in reporting a distressing PLE, and correctly classified 80% of cases. As shown in Table 3.11, three of the predictor variables made a unique statistically significant contribution to the model (SDQ total difficulties, reporting two upsetting negative life events and reporting three or more upsetting negative life events). The strongest predictor of reporting a distressing PLE was reporting three or more upsetting negative life events, recording an odds ratio of 58.56. This indicated that participants who reported three or more upsetting negative life events were 58 times more likely to report a distressing PLE than participants with no upsetting negative life event. The odds ratio for two upsetting negative life events was 9.39, indicating that participants who reported two upsetting negative life events were nearly 9 times more likely to report a distressing PLE than participants with no upsetting negative life event. The odds ratio for total difficulties on the SDQ was 1.21 indicating that higher SDQ scores were associated with a 21% increase in the likelihood of reporting a distressing PLE.

Table 3.11

Logistic regression predicting likelihood of reporting a distressing PLE following upsetting negative life events

Predictor Variable	*B*	S.E.	Wald	*df*	*p*	Odds Ratio	95% Confidence Interval
0 Upsetting negative life event	-	-	-	-	-	-	-
1 Upsetting negative life event	.76	.76	1.0	1	.318	2.13	.48 - .94
2 Upsetting negative life events	2.34	.81	7.66	1	.006	9.39	1.92 – 45.83
3+ Upsetting life negative events	4.07	1.26	10.41	1	.001	58.56	4.94 – 63.51
SDQ Total Difficulties	.20	.06	11.27	1	.001	1.21	1.09 – 1.37

Note. 0 life events was used as a reference category. Analyses were controlled for gender and age.

Table 3.12 shows the relative odds of experiencing a PLE for each negative life events frequency.

Table 3.12

The number (and percentage) of participants reporting distressing PLEs in each of the upsetting negative life event categories

Number of Upsetting Negative Life Events	Distressing PLE	No Distressing PLE
None	21 (68)	10 (32)
One	12 (86)	2 (14)
Two	16 (84)	3 (16)
Three	19 (95)	1 (5)

3.2.1.3 Regression analysis assessing the relationship between distressing PLEs and bullying. A binary logistic regression analysis with the total bullying score as a predictor variable and the occurrence of a distressing PLE as the dependent variable was conducted. Gender, age and the SDQ total difficulties score were also included to control for the confounding effects of these variables. The full model containing all predictors was statistically significant, χ^2 (4, N = 85) = 20.94, p < .001, indicating that the model was able to distinguish between participants who did and did not report a distressing PLE. The model as a whole explained 30% (Nagelkerke R Square) of the variance in reporting a distressing PLE, and correctly classified 69% of cases. As shown in Table 3.13, the only predictor variable that made a unique statistically significant contribution to the model was the SDQ total difficulties score. The odds ratio for this variable was 1.15 indicating that higher SDQ scores were associated with a 15% increase in likelihood of reporting a distressing PLE, in comparison to not reporting a distressing PLE. Bullying was not significantly associated with an increased likelihood of reporting a distressing PLE (p = .339).

Table 3.13

Logistic regression predicting likelihood of reporting a distressing PLE following bullying

Predictor Variable	*B*	S.E.	Wald	*df*	*p*	Odds Ratio	95% Confidence Interval
No Bullying	-	-	-	-	-	-	-
Bullying	.10	.101	.916	1	.339	1.10	.90 – 1.34
SDQ Total Difficulties	.14	.046	8.71	1	.003	1.15	1.05 – 1.26

Note. The occurrence of no bullying was used as a reference category. Analyses were controlled for gender and age.

3.2.2 The relationship between parent-reported PLEs and life events.

Hypothesis 2
2(a): There will be a significant positive correlation between parent-reported child negative life events and parent-reported child PLE severity and that this effect will be smaller than that found between child self-reported life events and PLE severity 2(b): The prevalence of child life events will be consistent across child self-report and parental report. and parent-reported life events will be consistent 2(c): Child self-report will show a higher prevalence of PLEs than parental report of child PLEs

Correlation coefficients for parent-reported PLEs and negative life events are presented in Table 3.10. Given that there were no significant associations between these variables (r_s values all > .28; p values all < .005) they were not examined further with inferential statistics. The prevalence rate for negative life events reported in the previous year by children (88%) and parents (87%) was very consistent. The prevalence rate for PLEs reported in the previous two weeks by children (83%) and parents (46%) was not consistent.

3.2.3 Content associations between PLEs and life events.

Hypothesis 3
Hypothesis 3: Both direct and indirect content associations will be evident in children's PLEs and adverse life events, in line with adult research

3.2.3.1 Participants and demographics. As described in the Method (see Section 2.5), information on PLEs and adverse life events for 25 of the 96 participants, who were in receipt of a manualised CBT intervention within the broader context of CUES, was used for content analysis. This was because the detailed therapist report of life events was only available for young people who had completed therapy as part of the CUES trial. Data for nine of these 25 young people was used in the pilot work outlined previously. Thus, the current analysis involved data for 16 young people (10 females, 6 males) with an average age of 11 years 2 months (*SD* = 3 years, 1 month) at the point of completion of the CUES baseline assessment and screening battery.

3.2.3.2 Nature of the PLEs. For two of the participants a delusion-like experience (belief that I am not good enough: *n* = 1; others out to harm me: *n* = 1) was identified as distressing, and for 14 participants a hallucinatory-like experience was identified (auditory: *n* = 3; visual: *n* = 9; auditory and visual: *n* = 2) as distressing.

3.2.3.3 Nature of the adverse life events. The following adverse life events were identified as distressing: parental conflict (*n* = 3), bullying (*n* = 3), physical and emotional abuse (*n* = 4), parental divorce (*n* = 1), suicide in family (*n* = 1), fire (*n* = 1), physical assault (*n* = 1), sexual assault (*n* = 1), and being locked in a rubbish bin for several hours (*n* = 1).

3.2.3.4 Direct associations between PLEs and adverse life events. Content ratings or direct associations were defined as a literal correspondence between the content of a life event and PLE. Nine of the 16 (56%) participants had associations rated as direct between their adverse life events and PLEs.

3.2.4.5 Indirect content associations between PLEs and adverse life events. Thematic ratings or indirect associations were defined as a thematic association between the life event and PLE. Fifteen of the 16 (94%) participants had at least one indirect association between their PLE and adverse life event. Table 3.14 provides information on the number of PLEs and adverse life events for which the four themes were rated as being present. Overall, high numbers of PLEs and adverse life events were rated for ‘threat’, ‘intrusiveness’ and ‘humiliation’.

Table 3.14

The number of PLEs and adverse life events rated for each theme

Theme	Psychotic-like experience *n*	Adverse life event *n*	Both psychotic-like experiences and adverse life events *n*
Threat	13	14	13
Intrusiveness	13	9	8
Humiliation	12	13	12
Guilt	2	8	1

Chapter 4: Discussion

4.1 Overview of Current Study

The current study was designed to investigate the relationship between adverse life events and psychotic-like experiences (PLEs) in a sample of 96 children aged 8-14 years who were referred to local CAMHS for emotional and/or behavioural problems. This is the first study, to the author's knowledge, to examine this relationship in a group of children as young as eight years. Parent reports of children's PLEs and negative life events were also collected, firstly to consider the reliability between parent and child reports of life events, and also to overcome any difficulties that might arise from relying exclusively on child self-reports of life events and PLEs. This is the first study to consider parent reports of their children's life events and PLEs, alongside child self-report. This study also included a content analysis of adverse life events and PLEs and is the first attempt to develop a methodology for examining the similarity in content between these experiences with young people.

The study considered three research questions. Firstly, the association of PLEs with upsetting negative life events and bullying was investigated, hypothesising increasing PLE severity with increasing frequency of these adverse life events; and a dose-response relationship such that adverse life events cumulatively increased the likelihood of experiencing a distressing PLE. Secondly, the correspondence between child and parent reported PLEs and negative life events was examined, hypothesising higher rates of child-reported compared to parent-reported PLEs, similar reports of negative life events, and a closer correspondence between negative life events and PLEs in child reports compared to parental report. Finally, content associations between adverse life events and PLEs were analysed, hypothesising both direct and indirect content associations.

The key findings of this research in relation to these three main hypotheses will be briefly summarised before a more detailed explanation of the current findings including relation to previous research, the limitations of the current study, and suggestions for future research are discussed. Finally, clinical implications will be considered.

4.2 Key Findings

In relation to the first hypothesis, upsetting negative life events were significantly associated with an increased likelihood of a distressing PLE and this association was characterised by a dose-response relationship; the more upsetting negative life events experienced the greater the likelihood of a distressing PLE. The association persisted irrespective of controlling for concurrent emotional and behavioural difficulties, gender and age. Although PLE severity was significantly associated with both upsetting negative life events and bullying in correlational analyses, this did not hold for bullying when emotional and behavioural difficulties, age and gender were controlled for. In relation, to the second hypothesis, parent-reported negative life events and PLE severity were not significantly associated. Children reported higher rates of PLEs than their parents and reports of negative life events were consistent across respondents. With respect to the third hypothesis, direct content associations between children's PLEs and adverse life events were evident for over half of the sample and indirect thematic associations were evident for the majority of the sample involved in that component of the research.

4.3 Summary of participant characteristics

4.3.1 Characteristics of the sample. The current sample consisted of nearly twice as many boys as girls. However, this seems to be typical of the gender ratio using CAMHS, according to a recent large-scale study (Posserud & Londervuld, 2013). No gender differences were observed in the number of PLEs reported or PLE severity. However, girls did report experiencing significantly more upsetting negative life events, and more friendship problems in particular, and more bullying overall, in comparison with boys.

The ethnic mix was generally representative of the local area in terms of the proportion of young people from Black and Ethnic Minority (BME) groups (Office for National Statistics, 2012), however it is difficult to achieve full representation with small samples. The majority of caregivers who completed the parent measures were mothers, as is typical of mental health research with minors (Wilkinson, Harris, Kelvin, Dubicka, & Goodyer, 2013).

On the SDQ, 37% of the children had a total difficulties score in the 'abnormal' range and 33% had an emotional symptom score in the 'abnormal' range. In comparison with SDQ data reported by Muris et al. (2004) with a community sample of 8-13 year-olds (N = 1,111) in the Netherlands, the average scores recorded for the current sample of clinically referred youths were higher overall and across the subscales. Elevated scores on the SDQ would be expected in a group of young people accessing services for emotional and/or behavioural difficulties occurring in the absence of a diagnosed mental health problem. Data from Meltzer, Gatward, Goodman, and Ford (2000) shows that the average total SDQ score for the current sample of children was also reported by 3.7% of British children aged 5-15 years, with just over 10% of that sample scoring higher than this.

4.3.2 PLEs and distress. Eighty-three percent of children reported at least one PLE for the previous two weeks and for 49% of these this experience had persisted over the past year. Over 60% of those who reported a PLE also reported upset or adverse impact associated with this experience. This reflects previous findings that PLE severity is associated with current psychological distress (Varghese et al., 2011). Consistent with the service setting, rates of both PLEs and distressing PLEs are slightly elevated compared to the general population (Kelleher et al., 2011; Laurens et al., 2007; 2011). However, it is important to note that significant numbers of the current clinically referred sample of children were experiencing PLEs that did not cause upset or adverse impact. This is consistent with epidemiological research that shows that although PLEs are common in the general population particularly when identified by self-report, as in the current study, only a minority are associated with distress (Laurens et al., 2011). Thus, the current clinically referred group is reporting a similar trend to that seen in general population and school-based samples.

That family mental health history was not related to PLEs is inconsistent with research showing that general parental psychopathology is associated with severe and persistent PLEs (Wigman et al., 2012). However, inconsistent results have been reported regarding the question whether the predictive value of parental psychopathology for psychopathology in the offspring is disorder specific (Goldstein, Buka, Seidman, & Tsaung, 2010), spectrum specific (Kessler, Davis & Kendler, 1997) or more diffuse (Mortensen, Pedersen & Pedersen, 2010). At the same time the family

mental health history information ascertained in this study was not specific to parents' mental health history and if it was rated as positive would reflect psychopathology in other family relatives as well as parents. This item was also assessed via parental report and true rates of psychopathology might have been under-reported due to processes such as stigma, avoidance or a lack of information.

There was no effect of ethnicity on reported PLEs. Laurens et al. (2008) reported that in their community sample of young people, children of African-Caribbean origin, in comparison with British children, presented elevated rates of PLEs. There is also evidence for pronounced vulnerability for schizophrenia and for the presence of psychotic symptoms in the absence of disorder among African-Caribbean adults living in the UK (Johns, Nazroo, Bebbington, & Kuipers, 2002). Over 30% of the current sample were identified as Black (Black British or Black Other). However, the heterogeneity within this category may have obscured variation in the prevalence of PLEs reported by children from different ethnic regions and origins. Thus, future research might benefit from assessing more detailed information about children's ethnicity.

4.3.3 Life events. Eighty-eight percent of children reported the occurrence of at least one negative life event and 65% reported the occurrence of at least one upsetting negative life event. Interestingly, the current sample reported much higher rates of disappointments, loss by death, loss of a pet, loss by moving, events involving danger to the self and events involving danger to others than a clinical sample of 11-17 year olds (N = 177) involved in a treatment trial for major depressive disorder (Wilkinson et al., 2009). One possible explanation for the higher prevalence among the current sample of clinically referred children, versus the clinical sample of the previous study, might be to do with the demographic areas from which participants were recruited. As mentioned, the area of the current study, the south London boroughs of Southwark, Croydon and Lewisham, experiences higher deprivation and higher levels of violent crime than the England average and thus there is greater likelihood that the children involved in this study were exposed to adversity.

Of note, reported life events in the current study did not differ according to participant ethnicity or family mental health history. Previous research shows that

exposure to negative life events in childhood has been reported by a greater number of participants from BME groups (Brady & Matthews, 2001) and a greater number of participants with psychiatric disorders in their families (Bandelow et al., 2004). It is not evident why this was not the case in the current study. However, issues have previously been highlighted with the heterogeneity within the categories assessing ethnicity, along with the validity of parental report of previous family mental health history and these factors might in part explain the current findings with respect to life events.

4.3.4 Bullying. Three-quarters of children reported an experience of bullying in the current school year. The prevalence rates for the bullying subtypes were significantly greater than those reported, with a school-based sample of 9-12 year-olds (N = 1,226), by the developer of the bullying questionnaire (Schonert-Reichl, 2009). That girls reported experiencing significantly more bullying than boys is not in keeping with data from community samples (Scheithauer, Hayer, Petermann, & Jugert, 2006; Smith, Cowie, Olafsson, & Liefooghe, 2003). This might reflect a bias in reporting with girls more likely to admit victimisation experiences in the current study. In the current study, there was no effect of ethnicity and family mental health history on bullying. Previous research shows that the association between race/ethnicity and bullying is complex and dependent on the ethnic composition within a particular study with little consistency across studies (Hong & Espelage, 2012), thus the finding of no effect of ethnicity on bullying might not be particularly unusual. Longitudinal data suggest that parental depression is associated with child victimisation (Beran & Violato, 2004). However, no relationship between family mental health history and bullying was observed here.

4.3.5 Developmental effects on the main variables. The study sample involved children aged 8-14 years (mean age = 11.5 years) and given the wide age range, correlations between each of the main variables and age were conducted. Significant age-related associations were observed on the bullying measure, only, with older children reporting more bullying than their younger counterparts. This trend differs from that typically reported with community and school-based samples of children, where decreases in victimisation with age are documented (Due et al., 2005). However, at the same time, research shows that being the victim of bullying is associated with an increased likelihood of having both a psychiatric diagnosis and

contact with mental health services (Kumpulainen, Rasanen & Puura, 2001). Given that this was a clinically-referred sample, it is not unusual that older children reported more bullying experiences than younger children and community samples. It is possible that the current sample of children might experience bullying as result of their difficulties or that emotional and/ or behavioural problems are a consequence of victimisation.

With respect to PLEs, consistent prevalence rates were reported for both younger and older children. This differs from data reported elsewhere with community-based sampled where a reduced prevalence of PLEs with age has been reported (Kelleher et al., 2011; Laurens et al., 2007; 2001). Despite including a wider age range of children than that of previous research (Laurens et al., 2007: 9-12 year-olds; Kelleher et al., 2011: 11-13 year-olds), developmental effects on the reporting of PLEs were not observed. This could, of course, be due to the fact that these were clinically referred youths and thus represent a different sample to that reported by previous research. Also, in light of evidence that PLEs are associated with psychopathology, more generally (Kelleher et al., 2012b), and given that the current sample were accessing services for emotional and/or behavioural difficulties, it is not unusual that the prevalence of PLEs was consistent across the age range involved. Considering van Os et al.'s (2009) persistence-impairment model, an important avenue of future research would be to explore whether PLEs are more likely to persist for clinically referred youth in comparison with community samples.

Prevalence rates for negative life events were also consistent across children of different ages. This is in keeping with data from clinical samples (e.g., Wilkinson et al., 2009) and school-based samples (Goodyer, Tamplin, Herbert & Altham, 2000) of young people. Consistent with the age at which the majority of English school-children transition from primary to secondary education, a greater number of 11-12 year-olds in the current sample reported changing school in the last year. No other effects of age on the types of negative life events reported were observed.

4.4 Results of Hypothesis Testing

4.4.1 The relationship between child-reported PLEs, negative life events and bullying. As detailed in Table 1.1 there is an emerging literature on the association between negative life events, bullying and PLEs in childhood. Consistent with

prediction and previous research, PLE severity was significantly correlated with both upsetting negative life events (Hypothesis 1a) and bullying (Hypothesis 1b). Further to this, upsetting negative life events were associated with a significantly increased likelihood of a distressing PLE and a dose-response relationship characterised this association (Hypothesis 1c) with the occurrence of three or more upsetting negative life events associated with a 58-fold increased likelihood of a distressing PLE. This relationship was independent of participant age, gender and emotional and behavioural difficulties.

The current study confirms and extends previous findings to include data from clinically referred children as young as eight years of age and is the first study to show the cumulative effects of upsetting negative life events in children from middle childhood. The relationship between PLEs and upsetting negative life events suggests that these may play a similar role in childhood to that of trauma and trauma sequelae in adults (Bebbington et al., 2004; 2011). It seems that PLEs are one of many potentially harmful outcomes a young person might experience following adversity. The current results suggest the importance of experiencing two or more upsetting negative life events on PLEs, as the odds ratio increased four-fold and was statistically significant for the experience of two, versus one upsetting negative life event. However, at the same time it is important that this finding is interpreted with caution as with a larger sample an effect for experiencing one life event on PLEs might be detected.

Although bullying was significantly correlated with PLE severity, it was, unexpectedly, not associated with an increased likelihood of experiencing a distressing PLE (Hypothesis 1d). Interestingly, emotional and behavioural difficulties were associated with a slightly increased likelihood of a distressing PLE; but not to the same extent as the likelihood observed for the experience of upsetting negative life events. However, results from these logistic regression models need to be interpreted with caution as it involves the creation of a pseudo model against which the model of interest is tested.

The finding that children who were bullied were not significantly more likely to report a distressing PLE than children who were not bullied was somewhat counterintuitive. This finding is contradictory to a number of studies that reported a

significantly increased likelihood of PLEs following bullying experiences (e.g., Arsenault et al., 2011; DeLoore et al., 2007; Lataster et al., 2006; Mackie et al., 2011; Schreier et al., 2009). However, two other studies have found a similar result to that of the current study (Kelleher et al., 2008; Nishida et al., 2008) with no association observed for bullying and PLEs. However, both these studies reported that being both the perpetrator and victim of bullying (referred to as bully/victim) was significantly associated with PLEs. Children in the current study were not asked to indicate whether they were the perpetrator of bullying and it is likely that some of those who reported bullying experiences also had bullied others. Future research would benefit from collecting information on bully/victim status so that this variable can be fully understood in terms of its relationship to PLEs.

There are a number of possible explanations for the finding that bullying was not significantly associated with an increased likelihood of a distressing PLE. Firstly, we did not have information on the nature of the victimisation experiences to allow subdivision by severity or impact of the experience. Participants were, however, asked to rate negative life experiences for impact and upset over a two-week period. It is these upsetting negative life events (prevalence rate = 62%) that were associated with an increased likelihood of a distressing PLE. Children were not asked to rate their bullying experiences for impact and upset and it is possible that being bullied might not have been upsetting for at least some of the sample. This in turn might reduce the extent to which bullying would be associated with an increased likelihood of a distressing PLE. Secondly, bullying was self-reported here (and also by Kelleher et al., 2011 and Nishida et al., 2008) while other studies have used private interviews that might give a more accurate and detailed assessment of experiences (e.g., Arsenault et al., 2011; Schreier et al., 2009). Thirdly, although the bullying questionnaire that was employed provided a definition of bullying at the start, this was brief and less comprehensive than the descriptions provided in other studies (e.g., Arsenault et al.). At the least, future research would benefit from asking participants to rate their bullying experiences for the level of impact and upset so that these can be more readily compared to the effects of upsetting life events.

Somewhat expected, although unpredicted, was the finding that emotional and behavioural difficulties were associated with an increased likelihood of a distressing

PLE. This is in line with research showing that participants who scored in the highest quartile of the internalising or externalising subscales of the Child Behaviour Checklist and the Youth Self Report at five and 14 years of age were four times more likely to report delusional experiences at 21 years (Scott et al., 2009). This finding is also consistent with research suggesting that PLEs might best be considered as an indicator of mental health problems more generally and not just psychotic disorder, exclusively (Poulton et al., 2000; Kelleher et al., 2012b). For example, large numbers of participants with PLEs have been found to report poor mental health (57% of 12-15 year-olds; Nishida et al., 2008) and meet criteria for non-psychotic psychiatric disorder (88% of adolescents; Colins et al., 2009; 80% of adolescents; Kelleher et al., 2012b), indicating the non-specificity of these experiences.

The importance of the relationship between general psychopathology and PLEs in this study is further highlighted by the fact that the inclusion of the SDQ in regression analysis rendered the relationship between bullying and PLEs non-significant. One possible interpretation of these inter-relationships is that bulling might result in more general psychopathology and that these difficulties in turn are associated with an increased likelihood of a distressing PLE.

4.4.2 The relationship between parent-reported PLEs and negative life events. As mentioned, this is the first study of this nature to simultaneously assess both child and parent PLEs and negative life events**.** To this end, the LEI was adapted, by the author for completion by parents, reporting on their child's experience in the previous year. The PLEQ was also adapted for completion by parents, reporting on their child's experience of PLEs. Results showed that, contrary to prediction (Hypothesis 2a), parent-reported negative life events and parent-reported PLEs were not significantly associated. This finding is most likely accounted for by the fact that the prevalence rate of parent-reported PLEs was half that reported by children. Despite being a clinically referred sample with emotional and/or behavioural difficulties substantial numbers of parents were unaware of their child's PLE(s).

However, that parents reported lower rates of PLEs than children was consistent with prediction (Hypothesis 2c) and previous findings with community samples (Kelleher et al., 2008; Laurens et al., 2007). Potential explanations for the observed

discrepancies include that children might not tell their parents, that parents under-report due to stigma associated with psychotic symptoms or that parents attribute these experiences to different processes (Laurens et al.).

Therefore, in this study, significant associations between negative life events and PLEs were only seen for child-reports of both of these experiences. Aresnault et al. (2011) suggested that the use of self-reports of life experiences and psychotic symptoms might overestimate prevalence rates in two main ways. First, the association may be inflated by having the same informant reporting on both life events and PLEs. Second, traumatic experiences and perception of threats may be part of the symptomatology of psychotic disorders and children's reports of life events might be biased by their psychotic symptoms. However, these authors did not ask parents to report on their child's PLEs and so did not explore the relationship between parent-reported PLEs and parent-reported life events, as was the case in the current study. Arsenault et al. did report that effects were greater for the relationship between child-reported PLEs and child-reported life events than for the relationship between child-reported PLEs and parent-reported life events. In the current study, similar effects were observed for these relationships, confirming a trend of child-reported PLEs relating to both child- and parent reported negative life events. Further research will need to include parent-report of children's PLEs to further explore how these relate to their reports of children's negative life events.

Interestingly, the same effect size was detected for the relationships between child-reported PLE severity and both parent PLE total and parent PLE severity. Also, hearing voices was the most commonly reported PLE by parents and for children this PLE was rated highest for distress. In combination, these findings could be interpreted as suggesting that this sample of clinically referred youths were more likely to disclose upsetting and distressing PLEs to parents.

Discrepancies were evident between child and parent responses to the individual items of the PLEQ. Statistically significant agreement was observed for three items only. Although, high agreement rates were not expected in the current study, Laurens et al. (2007) also reported overall discrepancies but that agreement rates were statistically

significant for eight of the PLEQ items. However, the greater number of statistically significant agreements in that study is likely due to the larger sample size ($N = 264$).

As hypothesised, the prevalence rates for child- and parent-reported negative life events were consistent (Hypothesis 2b) with an 88% agreement rate for the occurrence of *any* negative life event. In general, the findings with this parent-reported LEI data are in line with previous research that has found a consistent pattern of bullying across informants (Arsenault et al., 2011; Schreier et al., 2009). In comparison with the lower agreement rates for child- and parent-reported PLEs, the life event data suggests that the parents of these clinically referred youth had more knowledge of their children's negative life events than their PLEs.

The most prevalent negative life events reported by children for the last year were the hospital, friendship problems/difficulties, and illness/accident items. Children also rated these items highest for upset. Parents also reported high rates of the latter two items, and in addition to these reported a high prevalence rate for change of school. In terms of upsetting negative life events that occurred before the last year, 57% of parents and 47% of children reported this experience.

With respect, to inter-rater reliability between parent and child reports of the individual life events listed in the LEI, statistically significant agreement rates were observed for five of the 12 items (hospital, death, changed school, household change, moved house). However, despite being significant, the magnitude of these effects ranged only from fair to moderate, suggesting that for many child-parent dyads there was not agreement for these items. Low agreement rates here could be due to the fact that respondents were asked to recall whether these events had occurred over the past year. Children, in particular, might find it difficult to hold in mind the timing of certain events. For example, it has been shown that when diagnostic questions involve a time concept (e.g., the provision of a time frame) they are less well understood than other questions, by 9-11 year olds (Breton et al., 1995). Also, the use of a year time frame on the LEI may have decreased the likelihood of reliable recall of information with children and adolescents (Angold, Erkanli. Costello & Rutter, 2006).

The child and parent LEI data shows that while there is good agreement overall as to whether children have experienced a negative life event in the previous year, when it comes to the individual negative life events themselves there is less agreement about what has been experienced, or not.

4.4.3 Content associations between PLEs and adverse life events

Investigating phenomenological associations between children's PLEs and adverse life events and the development of a systematic and reliable methodology for analysing these experiences, as a guide for future research and clinical work, was also a concern of the current study. This on previous research with adults (Hardy et al., 2005) and sub-clinical and prodromal samples (Falukozi & Addington, 2011; Thompson et al., 2009) and extends it to a sample of clinically-referred 8-14 year-olds. This work was carried out on a sub-sample of young people who were randomised to receive the CUES pilot CBT treatment, following initial assessment and screening. Information on PLEs and adverse life events for 25 young people was extracted from the CBT research therapist's psychological formulation of their difficulties. Two types of associations were explored for each young person's PLE and adverse life event. First, direct content associations or a literal correspondence and second, indirect or thematic associations. Pilot work was first conducted, to identify relevant themes for rating indirect content associations and to establish acceptable levels of inter-rater reliability in rating of these themes, with data from nine of these young people. Four themes were identified as being relevant to and present in the PLEs and adverse life events of these young people: 'threat', 'intrusiveness', 'humiliation', and 'guilt'.

The two independent raters subsequently rated the PLEs and adverse life events for the other 16 young people to identify direct and indirect associations. Results showed that direct associations in content between PLEs and adverse life events were observed in 56% of the sample, while one or more indirect thematic associations were observed for 94% of the sample. Importantly, what these data seems to be suggesting is that adverse life events are somewhat present in the PLEs reported by these 8-14 year-olds. That over half of the sample had direct content associations between their PLEs and adverse life events seems to suggest that these events might impact on PLEs through the same memory processes involved in re-experiencing symptoms in PTSD. Further, given that all but one of the sample had indirect content associations, it is likely

that adverse life events also strongly influence affect, which in turn activates information-processing abnormalities and impacts on hallucinations. Further work is needed to tease apart how the relationship between the content of hallucinations relates to affect following negative life events. Therefore, there seems to be both a direct and indirect role of life events in the content of PLEs.

The rates of direct and indirect content associations observed here are substantially higher than those reported by Hardy et al. (2005) with individuals with psychosis (direct = 12.5%; indirect = 57.5%). High rates of associations in the current study could be due to two factors. Firstly, Hardy et al. examined these associations in a clinical sample of adults who were experiencing a relapse in positive symptoms of psychosis, with an average illness course of 12 years, while the current sample represent clinically-referred youth who report distressing PLEs. Thus, we cannot compare our results in a truly meaningful way with samples with a more chronic course of illness and disorder. Secondly, PLEs and life events were assessed relatively close in time for the current sample, in comparison with Hardy et al. where psychotic symptoms over the previous three months and lifetime occurrence of a trauma were assessed and used in content ratings. Content associations might be more likely to be observed when there is a shorter duration between life events and the occurrence of PLEs. For example, Hardy et al. suggested that the processes that maintain hallucinations may alter their nature and content over time, confounding the relationship between the experiences assessed in their study and possibly accounting for the lower rates of associations. Future research would benefit from exploring how such content associations change across the PLE trajectory.

Threat and humiliation were seen frequently in the PLEs and adverse life events of these young people and consequently, there were high rates of indirect content associations for these. Intrusiveness was present to a greater extent in PLEs than in adverse life events, thus yielding slightly fewer indirect associations, while guilt did not seem to be relevant to either PLE or adverse life events for these 16 young people, with just one indirect association observed here. That threat, intrusiveness and humiliation were present to such an extent in PLEs, and that threat and humiliation were present to such an extent in adverse life events possibly suggests that some of these themes represent a similar underlying thematic construct. It is possible that some of the utilised

themes were redundant here. These themes were selected based on previous research with adults and assessed for suitability by the CUES CBT research therapist. Future research could build on this work by exploring relevant themes for young people with qualitative research methodologies, where themes are identified in an inductive manner based on the person's experience.

It is interesting that relatively fewer adverse life events and PLEs were rated on guilt. It could be that the definition of guilt used here was not appropriate to the current sample of young people or that they did not feel guilty about their experiences. Guilt also was used by Hardy et al. (2005) and its application to younger samples might be affected by individual variation in socio-cognitive development. To elaborate, for a person to feel guilty requires an awareness of the harmful effect that their actions might have on others. One dimension of such an awareness is a cognitive understanding of others and empathy. Another dimension requires the ability to make causal inferences about one's actions, their responsibility for these and how these in turn might impact others. A guilt response therefore requires the integration of complex information and the ability to do this will depend on the young person's level of cognitive understanding about their social world.

Importantly, the current findings provide initial evidence for direct and indirect content associations between PLEs and adverse life events in young people and suggest themes that might be important for rating these indirect associations. These findings, with a clinically-referred sample of young people who report distressing PLEs, are consistent with previous research with samples at-risk for psychosis discussed above (Falukozi & Addington, 2011; Thompson et al., 2009). Findings for phenomenological associations between PLEs and adverse life events have face validity in that those who have had adverse experiences may feel the need to be more aware of their surroundings. At the least the findings support the need for comprehensive research in this area to improve our understanding of the aetiology and trajectory of PLEs and the nature of their relationship to psychotic disorder.

4.5 Limitations of the Current Study

Several limitations of the current work are discussed before the thesis turns to consider the meaning of the current findings, in the context of theoretical accounts of trauma and PLEs, and their clinical implications.

First, this was a cross-sectional study where PLEs, negative life events and bullying were assessed at the same time point. Therefore, the possibility of reverse causality cannot be completely ruled out as PLEs were not assessed prior to the adverse life experiences. However, it would have been difficult to reliably obtain these variables at younger ages. This aspect limits the generalisability of the current findings and the ability of the study to provide information about cause and effect. At the same time, the study was carried out to explore a sequential process (adverse life event–PLE) and in this respect it does provide useful information about possible directions of effect, in the absence of causality.

The cross-sectional design also means that no information was available about the PLE trajectory. Research shows that for many, PLEs are transitory (van Os et al., 2009) but it is also important to ascertain whether this is the case for clinically referred young people with emotional and/or behavioural difficulties. Early trauma has been associated with a persistent course of PLEs (Mackie et al., 2011; Wigman et al., 2012), and it would have been interesting to explore the PLE trajectory here, along with the mechanism(s) implicated in this course.

Second, that children did not rate their bullying experiences for impact and upset was a limitation of the current work. It makes the finding of no association between bullying and distressing PLEs difficult to interpret in the context of a dose response relationship between upsetting negative life events and distressing PLEs. If such ratings had been included and upsetting bullying experiences were unrelated to distressing PLEs then a more conclusive interpretation about the relationship between bullying and PLEs could be drawn. As it stands, we cannot be sure whether bullying was unrelated to PLEs for the current sample or whether these experiences were not upsetting and that this is why a relationship was not observed.

Third, the life events measure did not assess high impact life events such as abuse or severe trauma. Thus, these events were not included in quantitative analyses meaning that the effect of such experiences on the prevalence and severity of PLEs was not investigated. However, the research therapist assessed high impact life events when children received the pilot CBT intervention as part of CUES and thus some of these experiences were used in the content analysis of PLEs and adverse life events.

Fourth, all data were collected via self-report which is inherently subject to bias. There was no evidence of floor or ceiling effects suggesting that high levels of bias might not be a concern. The low agreement rate between parent and child PLEs highlights the importance of getting individuals to report on their own internal experience. However, future research might provide more reliable information via the use of interview-based assessment methods.

Finally, the content analysis would have benefitted from the inclusion of a control group of young people who were not reporting distressing PLEs. This would permit a comparison of the levels of adverse life events and provide a context for understanding the life events of the current sample who were reporting PLEs.

4.6 Clinical Implications of the Current Study

Early detection and targeted intervention for PLEs have the potential to change the course of early psychopathology (NICE, 2013; Yung et al., 2003). This work has implications for clinicians working with children who report PLEs. Assessment of trauma and negative life events are crucial from a safeguarding perspective and to aid accurate and meaningful case formulation. Furthermore, intervention strategies should consider the possibility that young children who report PLEs may be growing up in threatening environments and experiencing psychosocial adversity. This won't be the case for many, however, given the commonality of these experiences. The current findings also seem to be highlighting a role for negative life events that are upsetting in PLEs and clinicians might benefit from taking time to explore these events, specifically, and targeting their interventions here.

The content analysis of children's PLEs and adverse life events highlights that, for the clinician, the content of symptoms is important and might add to their

understanding of the young person and to an understanding of how they have responded to past experiences. Clinically, it is important to understand PLEs in the context of the individual's life experiences. Preliminary studies indicate some beneficial effects of CBT in the treatment of PLEs (Maddox et al., 2013) and this model can readily incorporate adverse life experiences.

4.7 Conclusions

The current work is the first to investigate the association between PLEs and adverse life events in a sample of clinically referred 8-14 year-olds and it enables some tentative conclusions to be drawn about the nature of this relationship.

It has been shown that PLEs are a common experience for the young people involved, and that the rates were in line with those previously reported with general population samples. Higher rates of negative life events, bullying and emotional and/or behavioural difficulties were also reported, in comparison with community samples, though this is in keeping with the service context.

Consistent with previous research with older samples, PLEs were significantly correlated with negative life events and bullying and the current work extends this finding to a younger sample. Upsetting negative life events were associated with a significantly increased likelihood of a distressing PLE, and this was characterised by a dose-response relationship. This finding highlights the importance of the cumulative experience of upsetting negative life events in the occurrence of PLEs and fits with previous findings with adolescents and adults. However, future research will need to examine how bullying that is rated as upsetting relates to PLEs, given that bullying was not associated with a significant increased likelihood of a distressing PLE.

As expected, children reported higher rates of PLEs than their parents and similar rates of negative life events. Thus, despite being a clinically referred sample, the trends reported with community samples was also mirrored here. However, there was evidence that parents were more aware of PLEs that were rated as severe and distressing for their child, suggesting that young people might be more likely to disclose upsetting PLEs.

The content analysis, albeit a preliminary methodology for examining such associations, suggests that there may be a phenomenological association between adverse life events and PLEs and suggests a method for examining potential associations.

In sum, there are clear associations between children's PLEs and adverse life events and the current work adds to our understanding of how these experiences might be linked. At the same time, it has important clinical implications for work with young people and highlights the importance of considering not only the occurrence of these experiences but also their content, in planning interventions to reduce both current distress and the future risk of developing a range of adverse mental health outcomes.

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APPENDIX A: Information sheet for parents/caregivers

Information Sheet for Parents/Carergivers
Version 2 – 10/4/11

Title of study: Coping with Unusual Experiences (CUES)

We are inviting you and your child to take part in a research project.

You should only take part if you want to.

If you do not want to take part, this will not affect the usual care or services that you or your child receive in any way.

Before you decide whether you want to take part, it is important for you to understand why the research is being done and what it will involve.

Please take time to read the following information carefully.
One of our team will go through the information sheet with you and answer any questions you have. This should take about 15 minutes.
Talk to other people about the project if you want to.

- Part 1 tells you the purpose of this project and what will happen to you if you take part.
- Part 2 gives you more detailed information about how the project will be carried out.

Please ask us if there is anything that is not clear or if you would like more information.

Contact details: Nedah Hassanali (Research Worker): Department of Psychology, King's College London, Institute of Psychiatry, Denmark Hill, London, SE5 8AF. Tel no: 0207 848 5794/ 07427475940

Karen Bracegirdle (Research Therapist): South London and Maudsley NHS Foundation Trust, Southwark CAMHS, 1st Floor Mapother House, De Crespigny Park, London, SE5 8AZ. Tel no: 0203 228 7777/ 07427425411

REC Reference Number: R&D2011/028

You will be given a copy of this information sheet

Part 1

What is the purpose of the project? We are trying to find new ways to help children cope with unusual experiences, emotional problems and stress. We have put together a package of strategies, which we hope will be helpful. We talk young people through the package to help them learn new ways of coping with their problems. The package is based on talking therapies which have been shown to be helpful for both adults and children reporting anxiety or worries, low mood and unusual experiences. Some children have already completed the package, and they said they liked it and found it helpful. The next step is for more children to complete the package and for us to find out how they feel and how they are coping before and after completing the package, and to compare this to children who have not completed the package.

We also want to find out more about the causes of upsetting unusual experiences in young people, so we will be asking all the children who agree to take part in the study, and their parents or carers, to answer some questions about feelings and experiences, and complete some activities about everyday problems and situations. We will then compare a group of children with unusual experiences who feel upset to children who do not have these experiences.

What do you mean by 'unusual experiences'? Lots of people have experiences which can seem unusual to others. For example, hearing voices that other people cannot hear, seeing, feeling or smelling things that other people cannot, or finding that things around them look somehow odd or different. These experiences are much more common than most people think and often do not cause any problems for the people experiencing them. They might even be enjoyable. However, sometimes these experiences can be upsetting or worrying to the person who has them, or can stop the person doing what they normally do. This in turn can interfere with school or work, friendships and family relationships. There are some strategies for dealing with both the experiences and the upset that can happen alongside them. The package is a collection of these strategies, and we would like to find out whether it helps young people to cope.

Why has my child been asked to take part? We are offering the package to children aged 8-14 who are seeking help from Child and Adolescent Mental Health Services. For the first part of this study, we are inviting all children in the service and their parents/carers to complete two questionnaires which ask about unusual experiences and feelings. This is to find out if the package will suit your child. Your child will need to be able to speak enough English to understand the package and the questionnaires. For the second part of the study, we will offer the package to children who report an unusual experience and feeling upset. We will also ask some children who do not report an unusual experience and feeling upset to complete some questionnaires and activities.

What will my child and I be asked to do?

Stage 1: If you and your child would like to take part in the study, you will first need to sign the form at the end of this sheet, to say that you are happy to go ahead. In the first stage of the study, your child will complete the two questionnaires to see if the package is suitable. These will take about 15 minutes to complete, in a short meeting with a research worker. If the package is suitable for your child, he or she will be invited to take part in the second stage of the study.

If the package is not suitable for your child (because he or she is not having unusual experiences or feeling upset), we will ask you and your child to complete some questionnaires about feelings and experiences, and complete some activities designed to show how people think about everyday problems and situations so we can find out more about what causes unusual experiences and upset. This will usually take two or three meetings or about two hours in total, with the research worker, and can be spaced over as many meetings as you like.

Stage 2: In the second stage of the study, half of the children taking part will be invited to complete the package immediately, and half will be asked to wait for 3 months before completing the package. This is so that we can see if adding the package is more helpful than just waiting for help from Child and Adolescent Mental Health Services.

To see if the package is more helpful than just waiting, it is important that the group of children who receive the package straight away and the group who have to wait for 3 months are as similar as possible. Whether your child receives the package straight away or after a wait will therefore be decided by chance (randomly), by a process a bit like tossing a coin. This will be carried out at a centre separate to the research team, who will not have any information about you or your child. You will not be able to choose which group you and your child are in, nor will any member of the team.

Completing the package will involve your child attending some meetings with a therapist. There will usually be around 9-12 meetings lasting about 45 minutes each, but we can arrange the number and length to suit your child. The meetings will usually take place weekly for between two to three months. They will be held at a location to suit you and your child. We will try hard to make appointment times convenient for you and your child. For example, wherever possible appointments will be made outside of school hours.

As a way of checking that the therapists and research workers are all working in the same way, and working with the package as well as possible, we would like to audiorecord the meetings. You and your child will be asked whether this is OK each time they meet with the therapist or researcher.

You and your child will be asked to complete some questionnaires and activities at the very start of the study, after completing the package or after the 3-month wait, and again after one month, so we can see if any positive changes last after the package has been completed. The questionnaires and activities are to see whether the package is helping your child or not. This usually takes two or three meetings with a researcher, or about two hours in total. Your child will also be asked how they found the package and any changes they would suggest for the future. We will also ask you for feedback on how you have found things while your child has been attending the meetings.

Your child will be given a £5 gift voucher as a thank-you for taking part in the project.

Will my and my child's taking part in the study be kept confidential? The information you and your child give us will usually be available only to the research team. However, the researcher will share with your clinical team any important information that is relevant to the care you receive, and will let the team and your GP know that you are taking part in the study, and will note down on the team's notes system that you are taking part in the study and when they meet with you. If you or child tell us anything about someone being hurt or not safe, we will have to tell other people who are there to help with these kinds of situations. More details are included in Part 2.

How will the information we give you be kept? All the answers you and your child give to the questionnaires and activities will be kept on paper and as an electronic file. The recordings will be kept as electronic files. They will be kept securely and anonymously and will be identified only by a number, not by your name. Your name will be kept separately, with the number, on paper, so that we can identify your questionnaires and recordings in the future if we need to (for example, if you decide you no longer want to be part of the study). We will only identify your questionnaires for a reason like this. Your details will be kept for up to 12 years, and then will be confidentially destroyed. We will keep a completely anonymous copy of the electronic file indefinitely, from which you will not be able to be identified at all. At the very end of the study, once we have seen a number of children, you and your child will be given a summary of the results.

Is there any risk from taking part? We do not think that the package will be harmful in any way. We want it to be helpful and it has been designed to be fun. The questionnaires and activities are all either designed for children and their parents or carers, or especially adapted for children, and have been approved by researchers who have many years experience of working with children. However if you or your child are distressed in any way by taking part, the therapists working on the study are qualified to deal with this sensitively and appropriately. If this happens, please talk to the researcher, or to one of the therapists. (Nedah Hassanali - Research Worker: Department of Psychology, King's College London, Institute of Psychiatry, Denmark Hill, London, SE5 8AF, Tel no: 0207 848 5794/ 07427475940 or Karen Bracegirdle (Research Therapist): 1st Floor Mapother House, De Crespigny Park,
London, SE5 8AZ. Tel no: 0203 228 7777/ 07427425411).
Are there any benefits of taking part? We hope that the children will enjoy taking part in the study and will learn some useful strategies for coping with day to day stresses. Both children and adults also sometimes find completing the questionnaires interesting and helpful.

Do I have to take part?
It is up to you and your child to decide whether or not to take part in this study. If you do decide to take part you are still free to stop at any time and without giving any reasons. This will not affect any other help or support that you or your child will be offered.

What happens when the project stops?

When you have finished taking part in the research, you will carry on as usual seeing the team where you were originally looking for help. If this help is available before the project finishes, you will be able to still carry on with the project if you would like to. We will ask you and your child if you would be willing to be contacted regarding future projects, and if you would, we will keep your name and contact details. You will be able to ask us not to contact you at any time, and this will not affect you in any other way. This project is only running for three years from 2011, and we cannot guarantee that the package will still be available after this.

This completes Part 1 of the Information Sheet.

If the information in Part 1 has interested you and you are thinking about taking part, please continue to read the additional information in Part 2 before making any decision.

Part 2
What if there is a problem?

What if relevant new information becomes available? Sometimes we get new information during a project. If we find out anything new about any of the questionnaires or the package which means it might be harmful or upsetting for you or your child in any way, we will tell you both at once and you can decide whether or not you want to carry on.

What will happen if I, or my child, no longer want to carry on with the study? If you decide you no longer want to take part, you should let us know at once. A member of the research team will talk to you about which parts you no longer want to be involved in (for example, you might not want to come for the package, but feel OK with the questionnaires). We would like to still keep the information you have already given us if this is possible, but we will check this with you as well. You can tell us that you would like us not to keep any information at all about you, and in this case we will destroy all our copies of the information you have given us. This will not affect any other care you or your child might be offered, or your rights in any other way.

Complaints: If you have a concern about any aspect of this study, you should ask to speak with the researchers who will do their best to answer your questions. (Nedah Hassanali - Research Worker: Department of Psychology, King's College London, Institute of Psychiatry, Denmark Hill, London, SE5 8AF, Tel no: 0207 848 5794/ 07427475940 or Karen Bracegirdle (Research Therapist): South London and Maudsley NHS Foundation Trust, Southwark Targeted CAMHS, 1st Floor Mapother House, De Crespigny Park, London, SE5 8AZ. Tel no: 0203 228 7777/ 07427425411). If you remain unhappy and wish to complain formally, you can do this through the NHS Complaints Procedure (PALS, The Maudsley Hospital, Denmark Hill, London SE5 8AZ, 0800 731 2864).

Harm: In the event that something does go wrong and you or your child are harmed during the research study there are no special compensation arrangements. If you are harmed and this is due to someone's negligence then you may have grounds for a legal action for compensation against your local NHS Trust but you may have to pay your legal costs. The normal National Health Service complaints mechanisms will still be available to you (if appropriate).

Will my taking part in this study be kept confidential? All information which is collected about you during the course of the research will be kept strictly confidential. All your answers to the questionnaires and the activities will be kept on paper and on an electronic database. The recordings will be kept as electronic files. They will be kept securely and anonymously and will

be identifiable only by a number, not by your name. Your name will be kept separately, with the number, on the database and on paper, so that we can identify your questionnaires and recordings in the future if we need to (for example, if you decide you no longer want to be part of the study). We will only identify your questionnaires for a reason like this. Paper copies of questionnaires will be kept securely by the researchers in a locked filing cabinet in a locked office. Your details will be kept for up to 12 years, and then will be confidentially destroyed. We will keep a completely anonymised copy of the database indefinitely, from which you and your child will not be able to be identified at all.

The information you give will usually be available only to the research team. However, the researcher will let your team know that you are taking part in the study, and will share with your clinical team any important information that is relevant to the care you receive. In addition, should you give any information, such as criminal disclosures, or information relating to your own, your child's or others safety, which requires action, including passing on information to others, we are legally obliged to pass this information on to services who are able to deal with these concerns.

The recordings will all be confidential and will be kept without your child's name or details in a locked filing cabinet in a locked office, except when the therapist is carrying them to and from meetings. They will be available only to members of the research team.

What will happen to the results of the research study? We intend to publish the results of the research. You will not be personally identified in any report/publication. We sometimes use quotes from participants when we write about the research. In this case we will tell you what we want to write and where it will be seen and check that you agree.

Who is organising and funding the research? The research is organised by the team, who are members of academic and clinical staff at the Institute of Psychiatry, King's College London and the South London & Maudsley NHS Trust. The research is funded by the Guy's & St. Thomas' Charity.

Who has reviewed the study? The study has been reviewed by the North West London REC2: 11/LO/0023.

How can I take part? If you would like to take part in this project, please complete the attached consent form. If you have any questions or concerns about taking part in this study please contact the researchers below.

Contact Details:

Nedah Hassanali (Research Worker): Department of Psychology, King's College London, Institute of Psychiatry, Denmark Hill, London, SE5 8AF, Tel no: 0207 848 5794/ 07427475940

Karen Bracegirdle (Research Therapist): South London and Maudsley NHS Foundation Trust, Southwark Targeted CAMHS, 1st Floor Mapother House, De Crespigny Park, London, SE5 8AZ. Tel no: 0203 228 7777/ 07427425411

APPENDIX B: Information sheet for young people

Information Sheet for Young People
V2 10th April, 2011
Coping with Unusual Experiences (CUES)

- ★ **What is this about?** We are asking if you want to be part of a project to find ways to help children or teenagers who have unusual experiences.

- ★ **Who are you? What do you do?** We work with children, teenagers and adults who are feeling upset or having problems and talk to them to find out what is upsetting them, then we help them find new ways to handle it.

- ★ **What are 'unusual experiences'?** Lots of children, teenagers and adults have these, and often they are not upsetting at all, but sometimes they can be. They are things like:

    - ☞ *Hearing or seeing things that other people can't*
    - ☞ *Feeling like something weird is going on that other people don't understand*
    - ☞ *Feeling like someone is watching, or following you*

- ★ **Why are you asking me?** We are asking all children and teenagers aged 8-14 who come to this centre.

- ★ **What if I say yes?** First, we will ask you and your parent or carer some questions. This is to try to find out more about what causes unusual experiences and what makes them upsetting.

- ★ **What happens next?** If you say you have unusual experiences and you are feeling upset, we will ask you if you want to try out some new ways of trying to handle them.

- ★ **What if I say yes?** You will meet with someone who will talk to you about what is happening and ways to help. You will have up to 10 meetings, at a time and place that is good for you and your family. So we can see if the meetings are helpful, some people will have the meetings straight away, and some people will have them after 3 months.

- ★ **Will I have to wait?** You might. It is worked out by chance – a bit like tossing a coin. We can't choose who waits and who doesn't.

- ★ **Can I say no?** Yes, you can. It is up to you whether you join in. If you don't want to that is fine – no-one will mind and it won't change anything at school, at home or at the centre. Even if you say yes, you can still change your mind whenever you want and you don't need to tell us why.

- ★ **Who will know about this?** The things you tell us are private, but we will tell other people who are there to help if we are worried about whether you or someone else is safe.

- ★ **Can I find out more?** Yes. Ask your parents or carer. We have given them a longer sheet like this one that you can read if you want. If they agree, we can tell you more about joining in on the phone, or we can meet you to tell you more. You can meet us on your own or with your family – it is up to you and your parent or carer.

 **Thanks for reading the sheet** 

APPENDIX C: Consent form for parents/caregivers

CONSENT FORM – V2 10/4/2011

Title of project: ***Coping with Unusual Experiences (CUES)***

Names of researchers: Karen Bracegirdle, Nedah Hassanali, Sarah Roddy

Please initial boxes:

1. I have read the information sheet dated 10/4/11 for the above project, and one of the researchers has talked to me about it. I have had enough time to think about it and ask questions. ☐

2. I understand that taking part is voluntary and that my child and I are free to withdraw at any time, without giving any reason, and without our medical care or legal rights being affected. ☐

3. I am willing for the researcher to let the team know that my child and I are taking part in the study. ☐

4. I am willing for the researcher to contact my team with any information relevant to my child's care, should this become apparent while we are taking part in the study. ☐

5. I am willing for the researchers to record this information in the team's electronic notes for my child. ☐

6. I give permission for sections of my child's medical notes to be looked at by the researchers, if it is relevant to taking part in this research (for example, to get an address, age or confirm clinical information). ☐

7. I am willing for my and my child's meetings with the therapist and researcher to be audiorecorded. ☐

8. I understand that information relating to me and my child taking part in this study will be stored in an electronic file for up to 12 years. ☐

9. I agree to take part in the above study, and for my child to take part. ☐

_____	_____	_____	
Name of parent/carer	Date	Signature	

10. I have explained the study to this participant and answered their questions honestly and fully. ☐

_____	_____	_____
Name of researcher	Date	Signature

When completed, 1 copy for the family, 1 for researcher; 1 (original) to be kept in medical notes

APPENDIX D: Assent form for young people

ASSENT FORM for Young People – V2 10th April 2011
Coping with Unusual Experiences (CUES)

Names of researchers: **ID:**

Thank you for thinking about taking part in this project. The project must be explained to you before you agree to take part. If you have any questions please ask before you decide whether to join in. You will be given a copy of this form to keep.

Please tick the boxes, if you agree and the answer is 'yes':

1. I have read the Information Sheet for Young People, dated 10th April, 2011, and someone has explained it to me and answered my questions. ☐

2. I know that I can change my mind about joining in anytime and I don't have to say why. ☐

3. I know what I say is private unless it is about somebody being hurt. ☐

4. It is OK to record the meetings with me. ☐

5. I want to join in with the project. ☐

If any answers are 'no' or you don't want to join in, don't write your name.
If you do want to join in, write your name on the line.

Young person's name: _____

Date:

6. I have explained the study and answered any questions. ☐

_____ _____ _____
Name of researcher Date Signature

When completed, 1 copy for the family, 1 for researcher; 1 (original) to be kept in medical notes

APPENDIX E: The Strengths and Difficulties Questionnaire Self-Report version for 11-17 years

For each item please check the box for Not True, Somewhat True or Certainly true. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of how things have been for you over the last six months.

1. **I try to be nice to other people. I care about their feelings.**
   - ☐ Not true
   - ☐ Somewhat true
   - ☐ Certainly true

2. **I am restless; I cannot stay still for long.**
   - ☐ Not true
   - ☐ Somewhat true
   - ☐ Certainly true

3. **I get lots of headaches, stomach-aches, or sickness.**
   - ☐ Not true
   - ☐ Somewhat true
   - ☐ Certainly true

4. **I usually share with others (food, games, pens, etc.)**
   - ☐ Not true
   - ☐ Somewhat true
   - ☐ Certainly true

5. **I get very angry and often lose my temper.**
   - ☐ Not true
   - ☐ Somewhat true
   - ☐ Certainly true

6. **I am usually on my own. I generally play alone or keep to myself.**
   - ☐ Not true
   - ☐ Somewhat true
   - ☐ Certainly true

7. **I usually do as I am told.**
   - ☐ Not true
   - ☐ Somewhat true
   - ☐ Certainly true

8. **I worry a lot.**
   - ☐ Not true
   - ☐ Somewhat true
   - ☐ Certainly true

9. **I am helpful if someone is hurt, upset, or feeling ill.**
   - ☐ Not true
   - ☐ Somewhat true

- ☐ Certainly true

10. I am constantly fidgeting or squirming.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

11. I have one good friend or more.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

12. I fight a lot. I can make other people do what I want.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

13. I am often unhappy, down-hearted, or tearful.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

14. Other people my age generally like me.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

15. I am easily distracted. I find it difficult to concentrate.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

16. I am nervous in new situations. I easily lose confidence. Not true

- ☐ Somewhat true
- ☐ Certainly true

17. I am kind to younger children.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

18. I am often accused of lying or cheating.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

19. Often children or young people pick on me or bully me.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

20. I often volunteer to help others (parents, teachers, children).

- ☐ Not true

- ☐ Somewhat true
- ☐ Certainly true

21. I think before I do things.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

22. I take things that are not mine from home, school, or elsewhere.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

23. I get on better with adults than people my own age.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

24. I have many fears. I am easily scared.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

25. I finish the work I am doing. My attention is good.

- ☐ Not true
- ☐ Somewhat true
- ☐ Certainly true

26. Do you have any other comments or concerns?

27. Overall, do you think that you have difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

- ☐ No
- ☐ Yes- minor difficulties
- ☐ Yes – definite difficulties
- ☐ Yes – severe difficulties

If you have answered 'Yes' Please answer the following questions about these difficulties.

28. How long have these difficulties been present?

- ☐ Less than a month
- ☐ 1-5 months
- ☐ 6-12 months
- ☐ Over a year

29. Do the difficulties upset or distress you?

- ☐ Not at all
- ☐ Only a little
- ☐ Quite a lot
- ☐ A great deal

Do the difficulties interfere in your everyday life in the following areas?

30. Home life?
- ☐ Not at all
- ☐ Only a little
- ☐ Quite a lot
- ☐ A great deal

31. Friendships?
- ☐ Not at all
- ☐ Only a little
- ☐ Quite a lot
- ☐ A great deal

32. Classroom learning?
- ☐ Not at all
- ☐ Only a little
- ☐ Quite a lot
- ☐ A great deal

33. Leisure activities?
- ☐ Not at all
- ☐ Only a little
- ☐ Quite a lot
- ☐ A great deal

34. **Do the difficulties make it harder for those around you? (Family, friends, teachers etc.)?**
- ☐ Not at all
- ☐ Only a little
- ☐ Quite a lot
- ☐ A great deal

APPENDIX F: Caregiver Questionnaire

This form should be filled in by the child's main caregiver (usually, this is the child's mother or father). It would help us if you would answer all the questions as best you can, even if you are not absolutely certain of your answers or the question doesn't seem to apply to your child

Participant ID: _____

Who is completing this form? (e.g., child's mother, father, grandmother)

_____

Gender of Child: _____

Your child's DOB: _____

Your child's city and country of birth: _____

Child's mother DOB: _____

Child's mother city and country of birth: _____

Child's father DOB: _____

Child's father city and country of birth: _____

Did your child ever live away from London Yes No
(Please circle)

Is English your child's first language? Yes No
(Please circle)

What ethnic background best describes your child? (Please choose one of the following):

- White: British/Irish/Other
- Black: Black British/ Other
- Mixed Race
- Asian or Asian British: Indian/ Pakistani/ Bangladeshi/ Other
- Latin American
- Other

Has your child, or any of your child's relatives, ever seen a doctor about a mental health condition? Please give details

_____
_____
_____
_____

APPENDIX G: Life Events Measure for Young People

These questions are all about the last year.
We would like to know about things that have happened to you and your family over the last year.

1. Have you changed school in the past year?*

☐ Yes
☐ No

If YES, give reason:

Date(s):

How did it feel at the time?

☐ Very good/pleasant/happy
☐ Quite good/pleasant/happy
☐ Neither good or bad
☐ Quite bad/unpleasant/sad/painful
☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

☐ Yes
☐ No

2. Who lives in your house?

2a. Have there been any changes in the number of people in your household in the past year? Has anyone left or joined your family?*

☐ Yes
☐ No

If YES, describe changes:

Date(s):

How did it feel at the time?

☐ Very good/pleasant/happy
☐ Quite good/pleasant/happy
☐ Neither good or bad
☐ Quite bad/unpleasant/sad/painful
☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

☐ Yes
☐ No

3. Have you moved house in the last 12 months?*

☐ Yes
☐ No

If YES, describe moves:

Date(s):

How did it feel at the time?

☐ Very good/pleasant/happy
☐ Quite good/pleasant/happy
☐ Neither good or bad
☐ Quite bad/unpleasant/sad/painful
☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

☐ Yes
☐ No

4. Have there been any disasters at home over the past year, like a fire, a flood or a burglary?*

☐ Yes
☐ No

If YES, describe event(s):

Date(s):

How did it feel at the time?

☐ Very good/pleasant/happy
☐ Quite good/pleasant/happy
☐ Neither good or bad
☐ Quite bad/unpleasant/sad/painful
☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

☐ Yes
☐ No

5. Over the past 12 months, have you taken part in anything particularly successful or enjoyable outside school/college?

☐ Yes
☐ No

If YES, describe event(s):

Date(s):

How did it feel at the time?

- ☐ Very good/pleasant/happy
- ☐ Quite good/pleasant/happy
- ☐ Neither good or bad
- ☐ Quite bad/unpleasant/sad/painful
- ☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

- ☐ Yes
- ☐ No

6. In the last year, have you or any of your family or close friends had a serious illness or accident?*

- ☐ Yes
- ☐ No

If YES, describe and say who. (If more than one please describe and rate each separately):

Date(s):

How did it feel at the time?

- ☐ Very good/pleasant/happy
- ☐ Quite good/pleasant/happy
- ☐ Neither good or bad
- ☐ Quite bad/unpleasant/sad/painful
- ☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

- ☐ Yes
- ☐ No

7a. Have you or any of your family or close friends spent time in hospital over the past year?*

- ☐ Yes
- ☐ No

If YES, describe and say who (If more than one hospitalization, please describe and rate each separately):

Date(s):

How did it feel at the time?

- ☐ Very good/pleasant/happy
- ☐ Quite good/pleasant/happy
- ☐ Neither good or bad
- ☐ Quite bad/unpleasant/sad/painful
- ☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

- ☐ Yes
- ☐ No

7b. Have you or any of your family been away from home for any reason over the past year?

- ☐ Yes
- ☐ No

7c. Have you ever run away from home?

- ☐ Yes
- ☐ No

8. Has any of your family or close friends died over the past 12 months?*

- ☐ Yes
- ☐ No

If YES, describe and say who. (If more than one please describe and rate each separately):

Date(s):

How did it feel at the time?

- ☐ Very good/pleasant/happy
- ☐ Quite good/pleasant/happy
- ☐ Neither good or bad
- ☐ Quite bad/unpleasant/sad/painful
- ☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

- ☐ Yes
- ☐ No

9. Have you lost a family pet over the last year?*

- ☐ Yes
- ☐ No

If YES, describe and say who. (If more than one please describe and rate each separately):

Date(s):

How did it feel at the time?

- ☐ Very good/pleasant/happy
- ☐ Quite good/pleasant/happy
- ☐ Neither good or bad
- ☐ Quite bad/unpleasant/sad/painful
- ☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

- ☐ Yes
- ☐ No

10. Have you lost touch with any good friends over the past year? (e.g. moved away, changed school, etc)*

☐ Yes
☐ No

If YES, describe and say who. (If more than one please describe and rate each separately):

Date(s):

How did it feel at the time?

☐ Very good/pleasant/happy
☐ Quite good/pleasant/happy
☐ Neither good or bad
☐ Quite bad/unpleasant/sad/painful
☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

☐ Yes
☐ No

11a. Have you had any particular problems or difficulties with your friendships over the past year?

☐ Yes
☐ No

If YES, describe and say who. (If more than one please describe and rate each separately):

Date(s):

How did it feel at the time?

☐ Very good/pleasant/happy
☐ Quite good/pleasant/happy
☐ Neither good or bad
☐ Quite bad/unpleasant/sad/painful
☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

☐ Yes
☐ No

11b. Have you had any problems or difficulties with your parents or other family members over the past year?

☐ Yes
☐ No

11c. Have there been fights between your parents or anyone else at home?

☐ Yes
☐ No

If YES, say who fights?

12. Is there any other event which has occurred over the past 12 months involving you, your family or close friends which should be mentioned?

☐ Yes
☐ No

If YES, describe:

Date(s):

How did it feel at the time?

☐ Very good/pleasant/happy
☐ Quite good/pleasant/happy
☐ Neither good or bad
☐ Quite bad/unpleasant/sad/painful
☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

☐ Yes
☐ No

13. Thinking about things that upset you a lot, are there any other really important things that have happened to you before this last year?

☐ Yes
☐ No

If YES, describe:

Date(s):

How did it feel at the time?

☐ Very good/pleasant/happy
☐ Quite good/pleasant/happy
☐ Neither good or bad
☐ Quite bad/unpleasant/sad/painful
☐ Very bad/unpleasant/sad/painful

If you have chosen quite bad or very bad, were you upset about this for more than 2 weeks?

☐ Yes
☐ No

***Note*. * Indicates those items that were used for calculating the total number of negative life events and the total number of upsetting negative life events.**

APPENDIX H: Life Events Measure for parents/caregivers

These questions are all about the last year.

We would like to know about things that have happened to your child over the last year.

1. **Has your child changed school in the past year?**
   □ Yes □ No

2. **Have there been any changes in the number of people in your child's household in the past year? Has anyone left or joined your family?**
   □ Yes □ No

3. **Has your child moved house in the last 12 months?**
   □ Yes □ No

4. **Have there been any disasters at your child's home over the past year, like a fire, a flood, or a burglary?**
   □ Yes □ No

5. **In the last year, has your child or anybody else in their family or their close friends had a serious illness or accident?**
   □ Yes □ No

6. **Has your child or anybody else in your family or your child's close friends spent time in hospital over the past year?**
   □ Yes □ No

7. **Has your child or anybody else in their family been away from home for any reason over the past year?**
   □ Yes □ No

8. **Has your child ever run away from home?**
   □ Yes □ No

9. **Has any of your child's family or their close friends died over the past 12 months?**
   □ Yes □ No

10. **Has your child lost a family pet over the last year?**
    □ Yes □ No

11. **Has your child lost touch with any good friends over the past year? (e.g. moved away, changed schools, etc..)**
    □ Yes □ No

12. **Has your child had any particular problems or difficulties with their friendships over the past year?**
    □ Yes □ No

13. **Has your child had any difficulties either with you, or with anybody else in their family over the past year?**
    □ Yes □ No

14. **Have there been fights between you and your child, or your child and other family members over the past year?**
    □ Yes □ No

15. **Have there been fights between anyone else at your child's home in the past year?**

□ Yes □ No

16. **Is there any other event over the past 12 months which involved your child, you, anybody else in your child's family, or your child's close friends which should be mentioned?**
□ Yes □ No

17. **Thinking about things that might upset your child a lot, are there any other really important things that have happened to your child before this last year?**
□ Yes □ No

18. **Over the past 12 months, has your child taken part in anything particularly successful or enjoyable outside of school/college?**
□ Yes □ No

APPENDIX I: Bullying Questionnaire

The next few questions are about difficult and upsetting things that sometimes happen. You don't have to answer if you don't want to. Tell the researcher if you feel upset.

This school year, how often, if at all, have you been bullied in the following ways?

Definition of BULLY - There are lots of different ways to bully someone, but a bully has some advantage (stronger, more popular or something else), wants to hurt the other person (it's not accidental), and does so repeatedly and unfairly. Sometimes a group of students will bully another student.

1a. Physical Bullying (for example, someone hit, shoved, or kicked you, spat at you, beat you up, or damaged or took your things without permission)
Never
Rarely
Sometimes
Often

Can you tell us who it was/is?

1b. Verbal Bullying (for example, someone called you names, teased, embarrassed, threatened you, or made you do things you didn't want to do)
Never
Rarely
Sometimes
Often

Can you tell us who it was/is?

1c. Social Bullying (for example, someone left you out, excluded you, gossiped and spread rumors about you, or made you look foolish)
Never
Rarely
Sometimes
Often

Can you tell us who it was/is?

1d. Cyber Bullying (for example, someone used the computer or text messages to exclude, threaten, embarrass you, or hurt your feelings)
Never
Rarely
Sometimes
Often

Can you tell us who it was/is?

1e. Any other bullying that you haven't already told us about (someone making you do something you didn't like, or doing something to you that you didn't like)
Never
Rarely
Sometimes
Often

Can you tell us who it was/is?

APPENDIX J: List of Measures used in CUES (including those used in the present study)

Child Measures	**Parent Measures**
Strengths and Difficulties Questionnaire	Strengths and Difficulties Questionnaire
Ruminative Response Scale	*Caregiver Questionnaire*
Spence Children's Anxiety Scale	Mood and Feelings Questionnaire
Short Mood and Feelings Questionnaire	Spence Children's Anxiety Scale
Rey Auditory Verbal Learning Task	*Psychotic-like Experiences Questionnair*
Psychotic-like Experiences Questionnaire	*Hospital Anxiety and Depression Scale
Middle Years Development Instrument	*The BRIEF Cope Inventory
Life Events Interview	*Warwick-Edinburgh Mental Well-Bein Scale
Time Budget	*Social Support Questionnaire
Jumping to Conclusions Questionnaire and Beads Task	*Life Events Measure*
Modified Self-Stigma of Mental Illness Questionnaire	
Familiarity Questionnaire	
Brief Illness Perceptions Questionnaire	

Note. * Questionnaire asks about parent/carer. For all other measures questionnaires refer to the child. Questionnaires in italics were used in the current study.

APPENDIX K: Missing Data

Procedure followed for measures with items not completed:
Measures with missing items were not excluded. Conservative estimates of symptom level may result from this as items scored as missing from measures were substituted with 0s. However, the maximum number of items missing for a measure was 1 and this strategy was not viewed as concerning.

Measures not completed
Due to fatigue and time constraints not all measures were completed by each of the 96 participants. The table below lists the number of participants who did not complete each of the individual measures

Questionnaire	*n*
PLEQ	3
LEI	5
Bullying	5
Parent-reported PLE	6
Parent-reported LEI	60

APPENDIX L: Normative data for a clinical sample with the LEI

Table L1

Normative data for a clinical sample with the LEI

Event Type	Normative sample*	Current sample
	n	*n*
Disappointments	23	57
Loss by death	14	30
Loss of pet	12	24
Loss by moving	2	35
Danger to self	6	10
Danger to others	16	56

Note. * clinical sample = Wilkinson et al. (2009). Events were assessed for occurrence over the previous 28 weeks with a clinical sample ($N = 177$) involved in a treatment trial of major depressive disorder